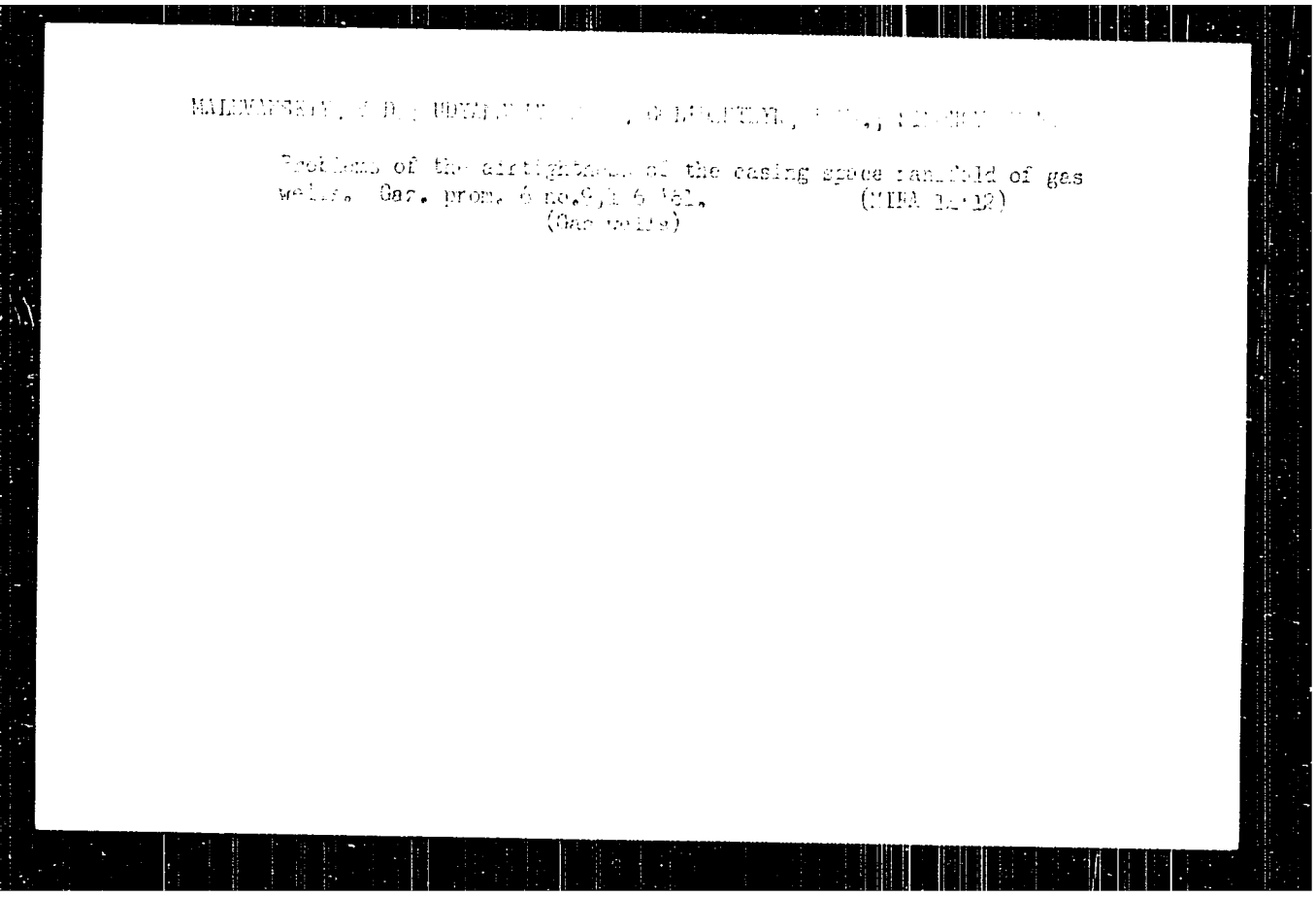
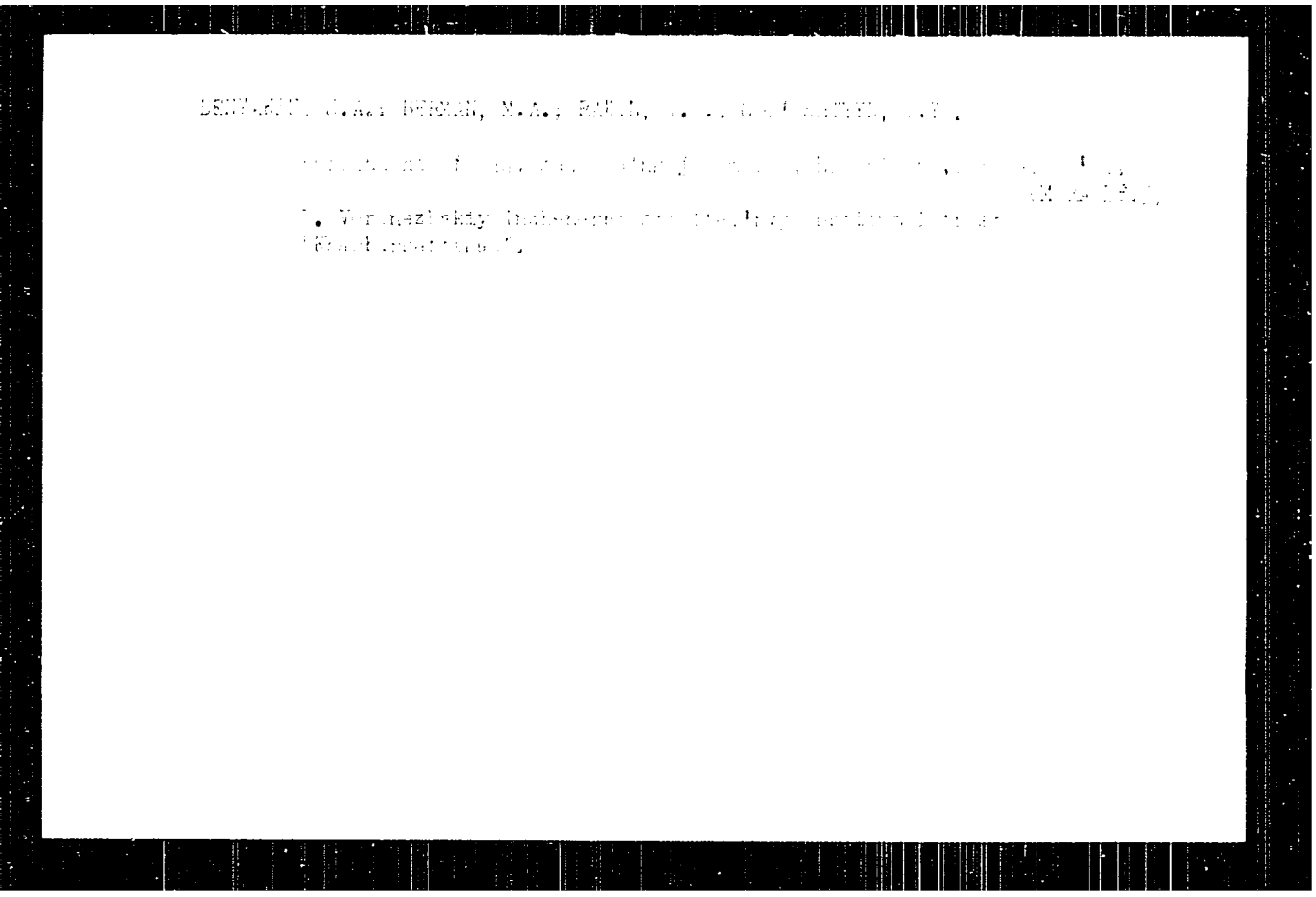


Problems of the airtightness of the casing space manifold of gas wells. Gaz. prom. 6 no.9:1-6 '61. (MIRA 14:12)
(Gas wells)

YATROV, Sergey Nikolayevich; GOL'DSHTEYN, Izrail Yefremovich; GLUSHCHENKO, Yekaterina Ivanovna; LATUKHINA, Ye.I., vedushchiy red.; POLOSINA, A.S., tekhn. red.

[Natural drilling fluids for drilling gas wells under complex conditions] Estestvennye promyvochnye zhidkosti dlia bureniia gazovykh skvazhin v oslozhnennykh usloviiakh. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961. 41 p. (MIRA 14:7)
(Shebelinka region--Drilling fluids)



GOL[illegible], I.Z., inzh.

Gutter spout funnel warmed by the air discharged from premises. Vod.i san.tekh. no.4:18 Ap '45.

(MLA 10:1)

RUDIN, Naum Grigor'yevich; KUPRIN, A.V., retsenzent; GOL'DSHTEYN, Zh. A. redaktor; MEDVEDEVA, L.A., tekhnicheskiy redaktor

[Guide to a knowledge of color] Rukovodstvo po tsvetovedeniiu. Moskva, Gos. nauchno-tekhn. izd-vo M-va legkoi promyshl. SSSR, 1956. 45 p. and 25 plates (in portfolio) (MLRA 10:5)

1. Chlen-korrespondent Akademii khudozhestv SSSR. (for Kuprin) (Color)

KULIGIN, Aleksandr Vasil'yevich; GOL'DSHTEYN, Kh.A., redaktor; POPOVA, T.G., tekhnicheskiy redaktor

[Jacquard looms; construction, repair and adjustment] Zhakkardovye mashiny; ustroistvo remont i naladka. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva legkoi promyshl. SSSR, 1956. 135 p. (MLRA 10:1)
(Jacquard weaving)

LUKASHEV, I.A.; PETROPOL'SKAYA, N., red.; GOL'DSHTEYN, L., red.; ANTONOV, V., tekhn. red.

[A new irrigation system] Novaia sistema oroshenila. Kuibyshev, Kuibyshevskoe obl.gos.izd-vo, 1953. 61 p. (MIRA 16:8)

(Kuybyshev Province--Irrigation)

KAPITONOV, I.; STEPANOV, A., red.; GOL'DSHTEYN, L., red.; ANTONOV, V., tekhn.red.

[For high quality of production] Za vysokoe kachestvo produktsii. Kuibyshevskoe knizhnoe izd-vo, 1953. 34 p. (MIRA 12:3)

1. Sekretar' tsekhovoy partiynoy organizatsii zavoda "Avtotraktorodetal'" (for Kapitonov).
(Quality control)

22(1) AUTHORS: Gol'dshteyn L.A. and [illegible], (Baku)

TITLE: Experience Working With Laboratory Radio Equipment

PERIODICAL: Fizika v shkole, 1959, Nr 3, pp 16-17 (USSR)

ABSTRACT: The authors describe the structural and methodological shortcomings of the laboratory radio equipment produced by the plants of Glavuchtekhprom and indicate means to overcome these shortcomings in practical training in secondary schools. The constructional shortcomings are: 1) feeding of the radio set by batteries of galvanic elements; 2) the filament resistor is very easily disintegrated. As shortcomings the authors list: 1) the use of pentodes type 2Ж2М or 2К2М, whereas the students study only triodes; 2) the fact that the feeding of a radio system by battery diverts teaching from life, as about 90% of the receivers produced by Soviet industry are fed by alternating current; 3) the sym-

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S/147-59-3-33/53

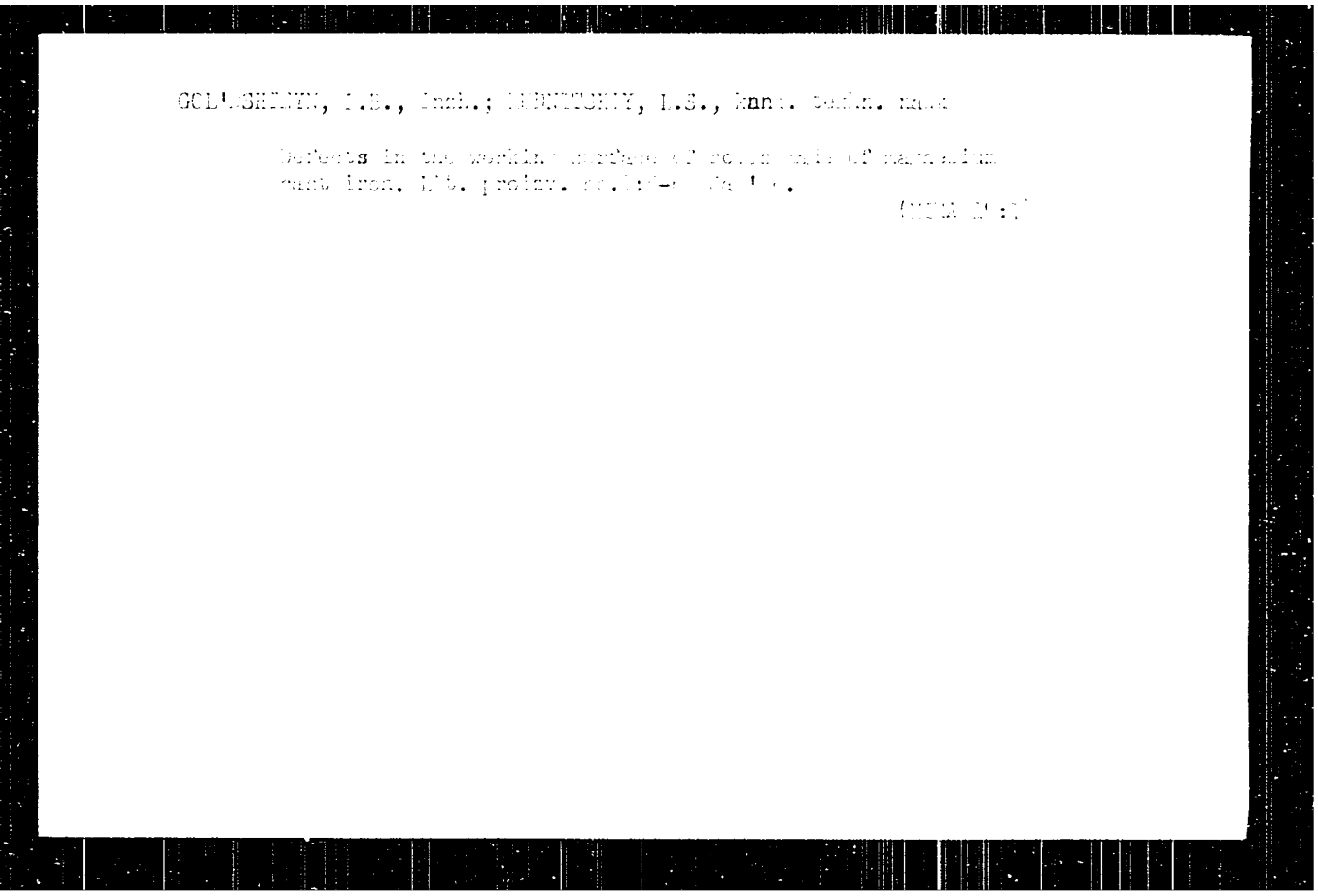
Experience Working With Laboratory Radio Equipment

bols intended to guide the assembly work are formed according to the visual appearance of the parts and make assembly too easy. The last shortcoming could be easily eliminated by takin the eight assembly diagrams from the description of the equipment. The other shortcomings were overcome by: 1) replacing battery feeding by alternating current (full-wave kenotron rectifier with filter and half-wave selenium rectifier with filter); 2) using six-volt tubes type 6K7 or 6Zh7. Moreover, in or er to facilitate the assembly work by students, the authors recommend the use of triodes type 6S5 instead of pentodes type 2K2M or 2Zh2M.

Card 2/2

GOL'DSHTEYN, ...A. (...aku)

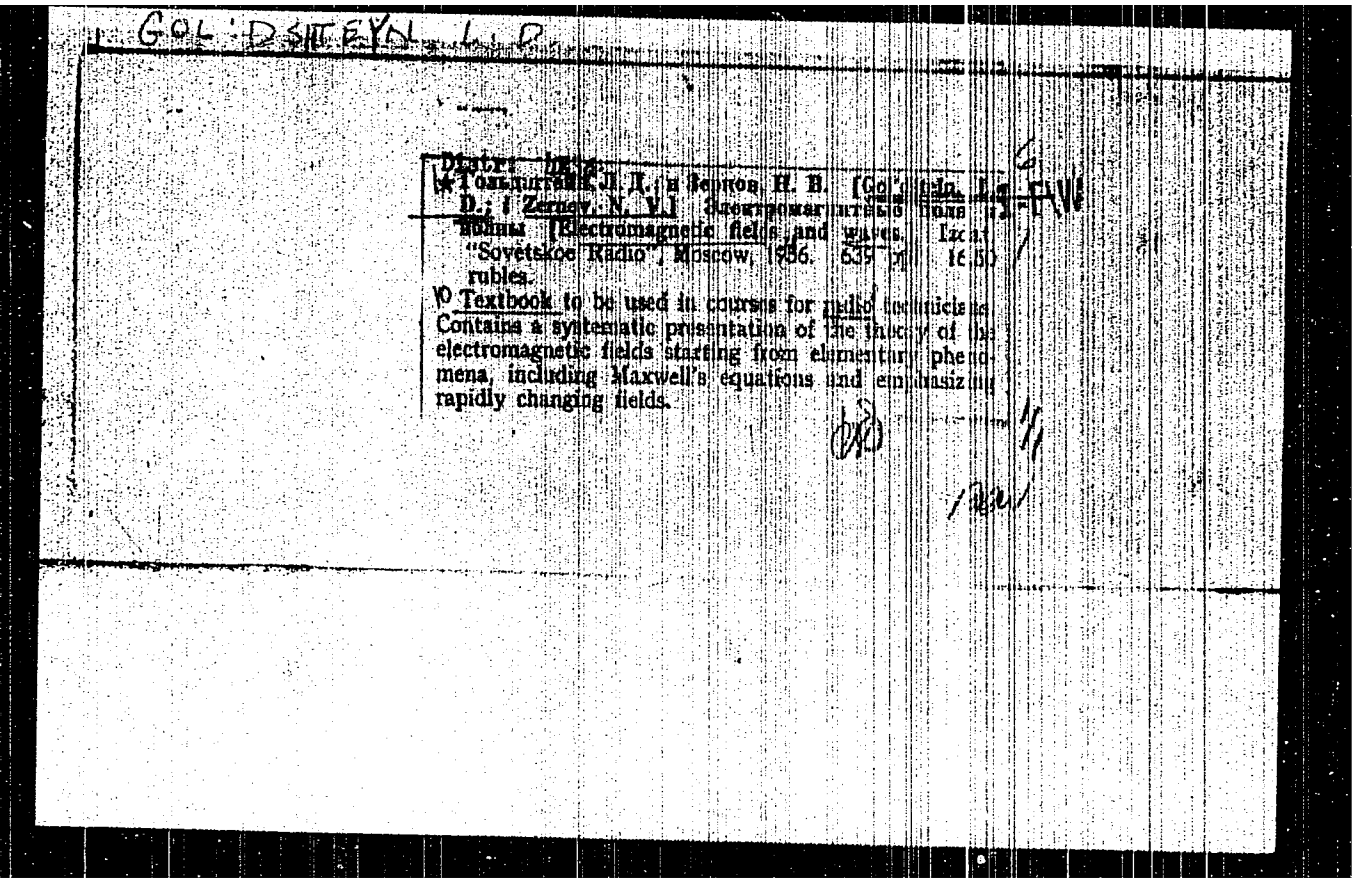
Utilizing an electronic oscillograph in experiments on acoustics. Fiz. v shkole 21 [illegible]:55-56 Ja-F '61. (MIRA 14:9)
(Sound)



GOL'SHTEYN, I.S., kand.; [illegible], I.S., kand. [illegible]

[illegible] in the working surface of roll mills of magnesium [illegible]. Nauch. issl. probl. [illegible].

[illegible]



GOL'DSHTEYN, L. D.

Tonkal'ev, K. I., and Zernov, N. V. [Co-auth.] Electromagnetic fields and waves. Izd-vo "Sovetskoe Radio", Moscow, 1956. 535 p. (6.5) rubles.

Textbook to be used in courses for radio technicians. Contains a systematic presentation of the theory of the electromagnetic fields starting from elementary phenomena, including Maxwell's equations and emphasizing rapidly changing fields.

AUTHORS: Cherenkov, A.A., Al'tshuler, A.E., Ryzhkova, E.M., Gol'dshteyn, L.D., Shnayder, G.S., Osipov, L.N., and Zhadanovskiy, N.B.

65-6-6/13

TITLE: Hydropurification of sulphurous petroleum products on an industrial installation. (Gidroochistka sernistykh nefteproduktov na promyshlennoy ustanovke).

PERIODICAL: "Khimiya i Tekhnologiya Topliva i Masel" (Chemistry and Technology of Fuels and Lubricants) 1957, No.6, pp.36-41 (USSR).

ABSTRACT: It is expected that hydropurification of sulphurous petroleum products will be widely used in the U.S.S.R. in the near future. On the basis of data on the process obtained by VNII NP and LEN NII, an industrial plant was designed and built by Giproneftezavod on one of the refineries. The plant is described (fig.1). The process is carried out using alumo-cobalt-molybdenum catalyst (developed by VNII NP) and hydrogen (99%), obtained by catalytic conversion of hydrocarbon gases. Straight run distillates and secondary products are being treated to produce Diesel fuel (GOST 4749-49). Plant operating conditions are given in table 1 and the results of purification of straight run distillate from a mixture of Mukhanovskoy, Tuymazinskoy-Devonskoy and Bavlinskoy crude oils, light gas oil from

Card 1/3

Hydropurification of sulphurous petroleum products on an industrial installation. (Cont.) 65-6-6/13

catalytic cracking (from 200-500° fraction) and a 1:1 mixture of the above two distillates in table 2. The degree of desulphurisation 95.2-95.8%. The analysis of gases obtained during hydropurification is given in table 3. The circulating gas before the absorber (with monoethanol-amine) contained 0.7-0.9 volume % of hydrogen sulphide, after the absorber - 0.1%. The mean balance of the products of hydropurification is given in table 4. Hydrogen consumption for straight run distillate was 0.38 wt % and for gas oil from catalytic cracking - 0.71 wt %. Hydrogen used for the reaction was 0.27% and 0.60% respectively. The sulphur balance is given in table 5. Up to 0.03% of H_2S calculated on the raw material used is carried out with treated fuel and is removed by washing with 2.5 - 4% NaOH solution. The alkali consumption 0.1 kg per ton of Diesel fuel. The working period of the catalyst without regeneration is 8000 hrs. The regeneration of the catalyst is carried out at a temperature not exceeding 550° under 40 atm. pressure with a mixture of an inert gas with air. Initial oxygen concentration 0.2 - 0.25 vol % and at the end of the regenerating period is increased to 1.4%. When the main

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Hydropurification of sulphurous petroleum products on an industrial installation. (Cont.) 65-6-6/13

part of the "coke" was burned out, the remaining part was removed by increasing oxygen concentration to 2% and preheating the gas to 520-550 C (2 hours). Total duration of the regeneration process 20 hours. The initial activity of the catalyst is completely restored. When the plant was stopped for inspection it was found that the upper layer of the catalyst was covered with iron sulphide. Accumulations of iron sulphide were found in various places, i.e., the corrosion of the apparatus was noticeable. The parts of the apparatus containing H_2S and H_2 at high temperatures were made from steel X5M, the remaining part from mild steel. Apparently the corrosion resistance of X5M steel was insufficient. The precipitation of iron sulphide on the catalyst has no apparent influence on its activity. There are 5 tables and 1 figure.

ASSOCIATION: VNII NP; Orgneft).

AVAILABLE:
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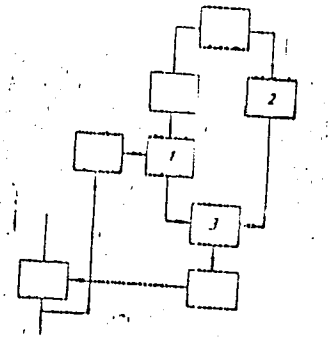
ACC NR: AP6015629

Fig. 1. 1 - periodically triggered parametric oscillator; 2 - autonomous parametric oscillator; 3 - discrete comparison circuit



of the reference parametric oscillator and the phase-sensitive parametric oscillator. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 12Jun65

Card 2/2

SIVERS, Arkadiy Petrovich; SUSLOV, Nikolay Aleksandrovich; METEL'SKIY, Vasiliy Ignat'yevich; GOL'DSHTEYN, L.D., nauchnyy red.; SHAURAK, Ye.N., red.; ERASTOVA, N.V., tekhn.red.

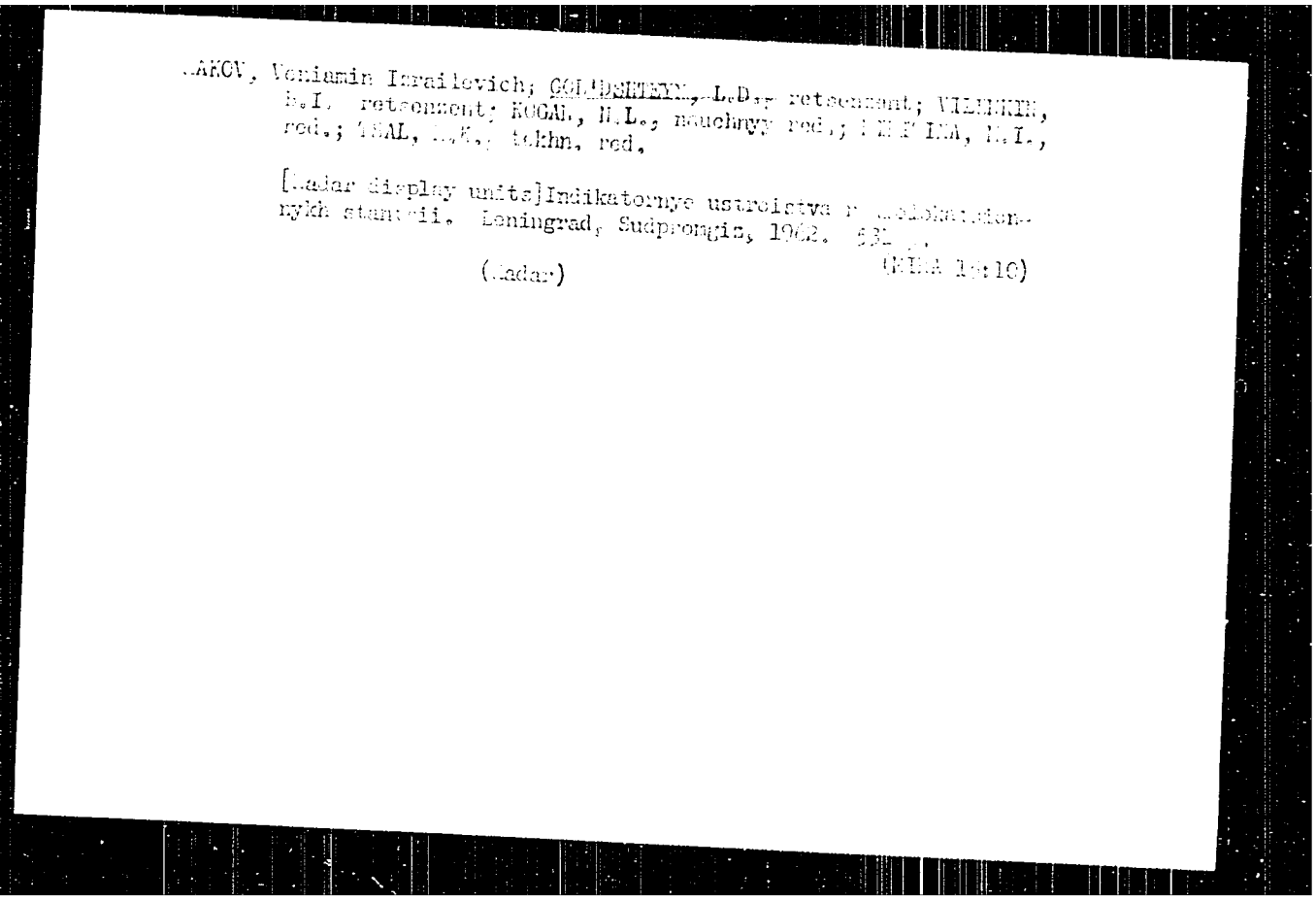
[Principles of radar] Osnovy radiolokatsii. Leningrad, Gos. soiuznoe izd-vo sudostroit.promyshl., 1959. 350 p. (MIRA 12:8)

(Radar)

SHATS, Solomon Yakovlevich; SUBASHIYEV, V.K., retsenzent; GOL'DSHTEYN, L.D., retsenzent; VLASOVA, Z.V., red.; KOKOVENKO, Yu.N., tekhn. red.

[Transistors and principles of their operation] Tranzistory i osnovy ikh primeneniia. Leningrad, Sudpromgiz, 1960. 135 p. (MIRA 15:5)

(Transistors)



...AKOV, Veniamin Izrailevich; GOLDSHTEYN, L.D., retsenzent; VILENKIN, B.I., retsenzent; KOGAN, M.L., nauchnyy red.; [illegible], M.I., red.; [illegible], L.K., tekhn. red.

[Radar display units] Indikatornye ustroistva [illegible] radiolokatsionnykh stantsii. Leningrad, Sudpromgiz, 1962. [illegible].

(Radar) (MIRA 15:10)

SHATS, Solomon Yakovlevich; PEROV, G.I., kand. tekhn. nauk, retsenzent; GOL'DSHTEYN, L.D., nauchnyy red.; SACHUK, N.A., red.; KOROVENKO, Yu.N., tekhn. red.

[Transistors in pulse techniques] Tranzistory v impul'snoi tekhnike. Leningrad, Sudpromgiz, 1963. 250 p. (MIRA 15:7)

(Transistors) (Pulse techniques (Electronics))

[illegible] 09-1-22/3

AUTHORS: Osipov, A.I., Shvartsman, V.A., Alekseyev, V.I., [illegible], V.S. [illegible], [illegible], [illegible], [illegible]

TITLE: The Use of Radio Isotopes when Investigating the Kinetics of Scrap Fusion and Slag Formation in the Open-Hearth Process. ([illegible])

PERIODICAL: [illegible]

ABSTRACT: 1) Investigation of the kinetics of scrap fusion.
The fusion velocity in the [illegible] and [illegible] open hearth furnaces is shown on the basis of the reduction of the specific activity of standard metal samples ([illegible] g), which contain [illegible] with the help of [illegible] counting tubes of the [illegible] type.
From the dependence obtained between the molten scrap quantity and the time which has elapsed since introduction of the scrap, it follows that nearly half of the scrap is molten already after about [illegible] minutes.
2) Investigation of the kinetics of slag formation.
[illegible], in which [illegible] was [illegible], was used for this investigation. The [illegible] is introduced into the liquid slag in [illegible] tubes and standard samples for measuring are taken out only after a lapse of time of [illegible] minutes. As measurement for the velocity in which [illegible] dissolves in the slag, the [illegible].

Card 1/2

The Use of Laser Techniques When Investigating the Kinetics of Decomp. [illegible]
Fused and Glass Formation in the Corpuscle by Heat.

$$\frac{dx}{dt} = k_0 e^{-E/RT} (1 - x)^n$$ and experimentally without.

x here denotes the weight of the [illegible] already dissolved and k_0
E the [illegible] activation [illegible] part. There
are 4 figures and 3 [illegible] references.

SUBMITTED January 12, 1957
AVAILABLE Library of Congress

Card 2/2

SOV/137-58-9-18966

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p. 1.e (USSR)

AUTHORS: Gorenshteyn, M.M., Gol'dshteyn, L.G.

TITLE: A Nucleonic Method of Investigating Pick-up of Metal on the Rolls of a Blooming Mill (Metod issledovaniya nalipaniya metalla na valki blyuminga s primeneniyem radioaktivnykh izotopov)

PERIODICAL: Sb. nauchn. tr. Zhdanovsk. metallurg. in-t, 1957, Nr 4, pp 153-156

ABSTRACT: The pickup of metal by the rolls of a blooming mill in the process of rolling is investigated by means of isotopes at the blooming mill of theStalino Metallurgical Plant. Radioactive P^{32} was introduced into the ladle with the molten metal. Ingots made from this metal were rolled on the blooming mill. After rolling, the rolls were removed and turned on lathes. The chip was collected and its radioactivity recorded. The difference between the radioactivity of the chip samples and the background testified to pick-up of metal from the ingot by the blooming-mill rolls. The work performed does not yet permit the drawing of any quantitative conclusions. A.F.

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1. Rolling mills--Performance 2. Metals--[illegible] 3. [illegible] 4. Radioisotopes--Applications

137-58-4-6740

Translation from Referativnyy zhurnal Metallurgiya 1958 Nr 4 p 63 (USSR)

AUTHORS Gerchikov, D.S., Goldshteyn, L.G., Ofengender, A.M.

TITLE A Radioactive-isotope Investigation of the Nature of Accumulations of Non-metallic Inclusions in Rimmed Steel (Issledovaniye prirody skopleniy nemetallicheskikh vklyucheniy v kipyashchey stali s pomoshchyu radioaktivnykh izotopov)

PERIODICAL Tr. Donetsk. otd. Nauchno-tekhn. ov-va chernoy metallurgii 1957, Nr 5, pp 102-123

ABSTRACT The investigation was performed with the aid of the radioactive isotope (RI) Ca^{45}, 0.83-17.26 millicurie being added per ton of steel to steel rimming in the mold. The addition was in the form of a mixture of $Ca^{45}O$ and slag. The isotope was also used in the runner brick by impregnating it with a solution containing $Ca^{45}O$. Determination of radioactivity by the "thick layer" method was made in samples of slag removed from the surface of the steel in the molds and in nonmetallic inclusions (NI) precipitated from specimens of the metal when rolled. It was established that when the RI was introduced into the slag

Card 1/2 the unit radioactivity of the NI varied from 29 to 3658 impulses

A Radioactive-isotope investigation (cont.)

per minute, or in the range of 0.13 to 30.5% of the radioactivity of the slag. The samples containing RI in Ni came from all levels of the ingot, and the number of samples with RI ranged from 41.2 to 88.5% of those taken from the height, and from 57.3 to 65% of those taken across the section of the ingot. It is remarked that the largest number of specimens having a high RI content was found in the center of the ingot, and the largest amount of RI in the specimens was found at $\ll 9\%$ from the top of the ingot. When RI was introduced into bulk refractory for runners, specimens containing RI were also found at all levels in the ingot, but the maximum amount of RI was found in specimens from the edge of the ingot and at distances of 10% and more from its top. It is noted that contamination of rimmed steel by Ni due to destruction of runner bricks is of random nature, and that elimination of the NI formed by entry of slag from the surface of the metal into the ingot makes for elimination of rimming of the metal in the mold and for mechanical separation of slag therefrom. Measures are recommended to reduce rejects of steel due to accumulations of NI, namely, pouring at 1600-1620° Fe-Mn deoxidation in the ladle and use of flux mixtures consisting of 65% soda ash, 35% scale to deposit the slag on the mold. Bibliography: 18 references.

AT 58

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18(0) PHASE I BOOK EXPLOITATION SOV/2125

Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Institut Metallovedeniya i fiziki metallov

Problemy metallovedeniya i fiziki metallov (Problems in Physical Metallurgy and Metallophysics) Moscow, Metallurgizdat, 1959. 540 p. (Series: Its: Sbornik trudov, 6) Errata slip inserted. 3,600 copies printed.

Additional Sponsoring Agency: USSR. Gosudarstvennaya planova komissiya.

Ed. of Publishing House: Ye.N. Berlin; Tech. Ed.: P.G. Islent'yeva; Editorial Board: D.S. Kamenetskaya, B.Ya. Lyubov (Resp. Ed.), Ye.Z. Spektor, L.M. Utevskiy, L.A. Shvartsman, and V.I. Malkin.

PURPOSE: This book is intended for metallurgists, metallurgical engineers, and specialists in the physics of metals.

COVERAGE: The papers in this collection present the results of investigations conducted between 1954 and 1956. Subjects

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covered include crystallization of metals, physical methods of influencing the processes of crystallization, problems in the physical chemistry of metallurgical processes, development of new methods and equipment for investigating metals, and production control. References follow each article.

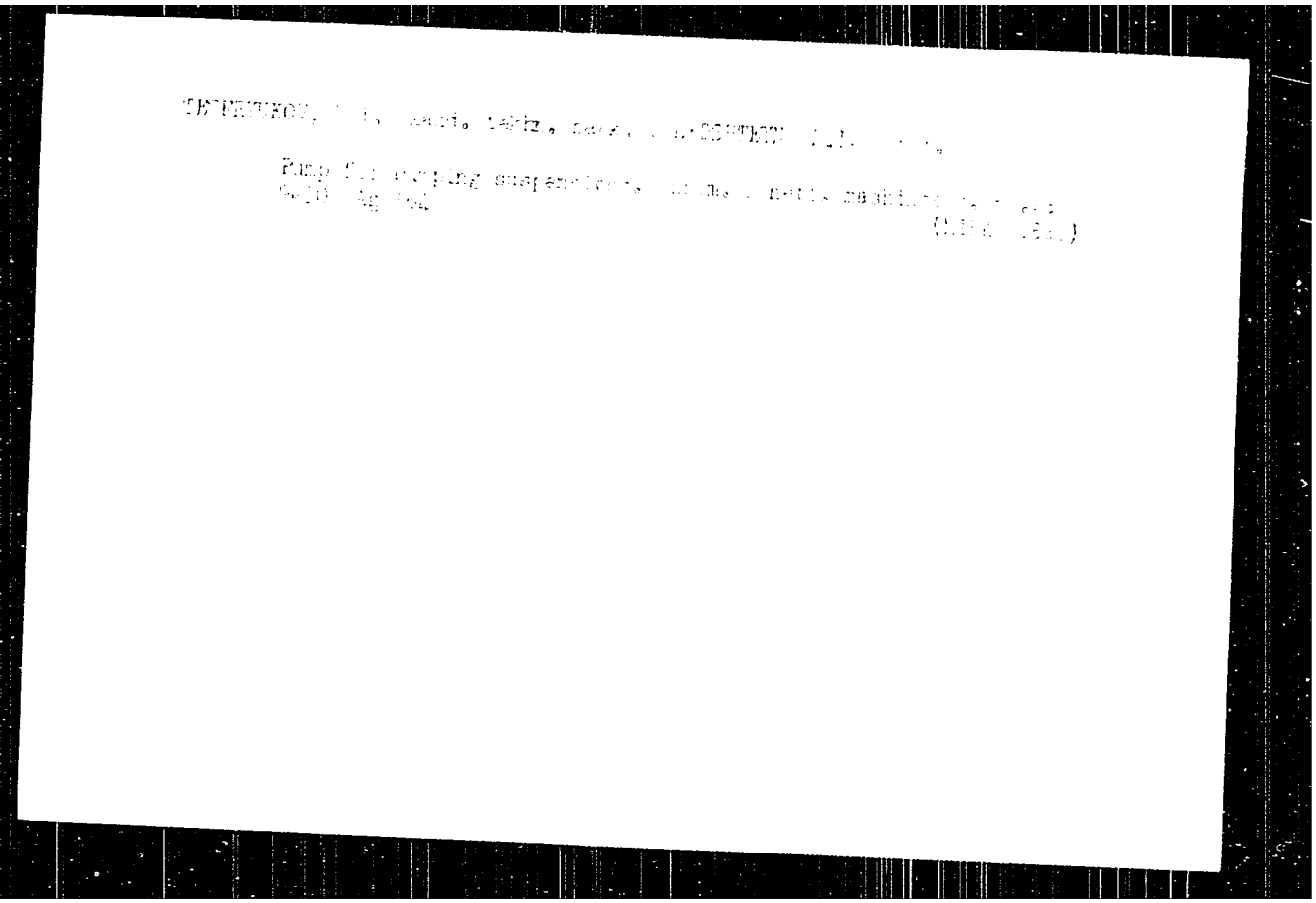
TABLE OF CONTENTS:

PART I. CRYSTALLIZATION OF METALS

The distribution process was studied with the use of a radio-active isotope (Ca^{45}). It was shown that the process of diffusion of a substance in slag takes place at a considerably slower rate than in metal.

A method for determining the speed of melting scrap in an open-hearth furnace in the scrap-ore process was developed on the basis of this investigation. The method is based on "isotopic dilution" using radioactive cobalt. It was shown that the melting speed depends on the duration of the pig iron pouring process and carbon content in the bath.

The transfer of sulfur from the gas phase to the bath takes place most intensively during the loading of the metallic portion of the charge. The speed of sulfur absorption during this period is 17-25 percent per hour, during pre-heating 8-11 percent, and during final melting 3-7.5 percent. Percentage is based on the sulfur content in the metal.

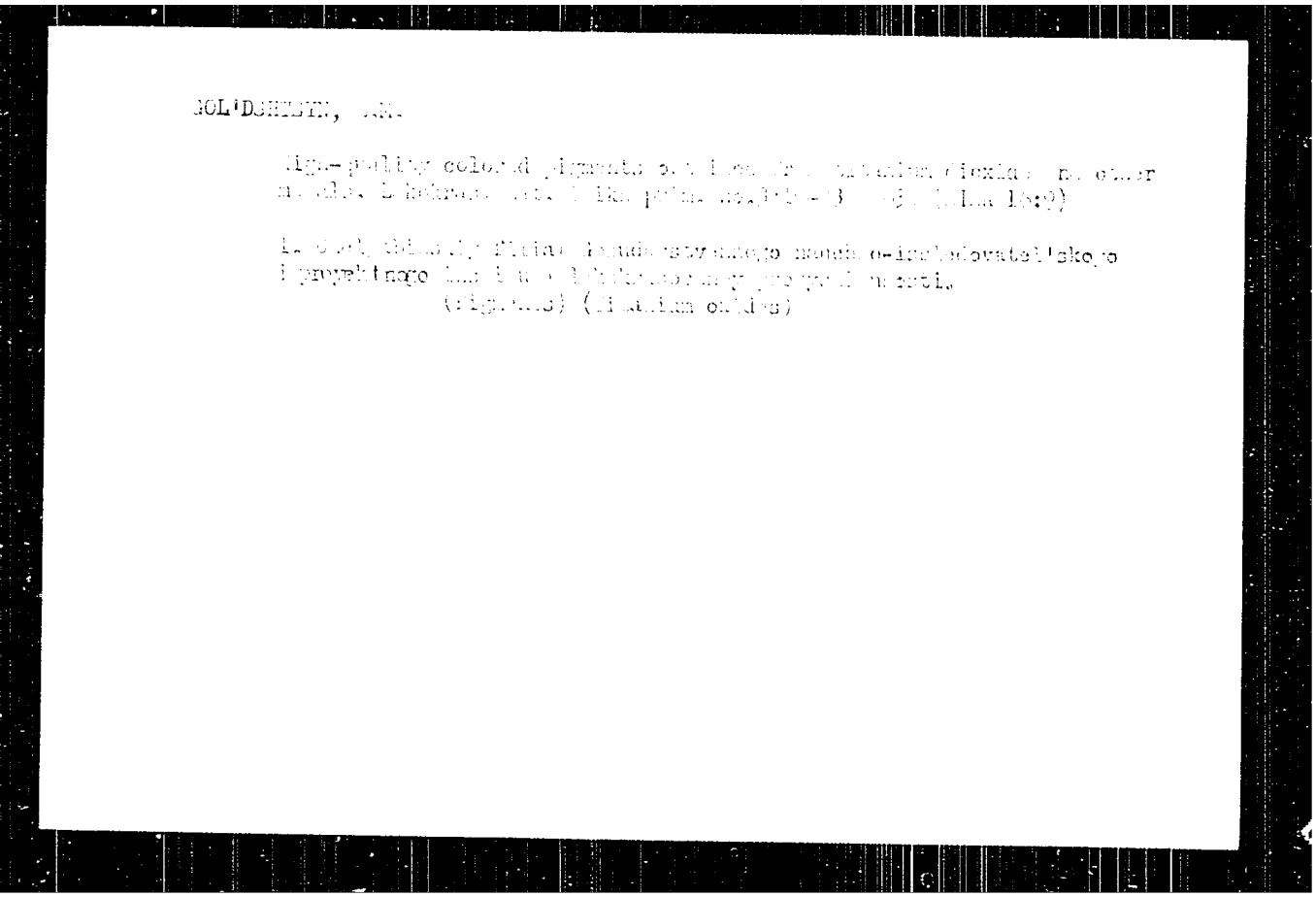


GOLDSHTEYN, L. M. DECEASED 1963/1

c. 1962

MEDICINE
(Cancer)

see ILC



L 06430-67 EWP(e)/EWP(m)/EWP(t)/ETC IJP(c) JD

ACC NR: AP6026707 SOURCE CODE: UR/0181/66/008/008/2467/2469

AUTHOR: Adirovich, E. I.; Gol'dshteyn, L. M.

ORG: Physicotechnical Institute, AN UzSSR, Tashkent (Fiziko-tekhnicheskiy institut AN UzSSR)

TITLE: Determination of the forbidden gap width of single-crystal boron by the "intrinsic thermometer" method

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2467-2469

TOPIC TAGS: forbidden zone width, boron

ABSTRACT: The "intrinsic thermometer" method, described earlier by the authors (DAN SSSR, 158, 313, 1964) and used for measuring and continuously checking the temperature of a current-carrying silicon wafer serving as the evaporator in the vacuum deposition of silicon films, was applied to the study of single-crystal boron. Measurements over a wide temperature range, up to the melting point of boron (2573°K), were performed by recording the volt-ampere characteristics of crystals heated by the current passing through them. From the values of V and I obtained, the values of ρ were calculated and plotted against the temperature. The resulting function $\rho(V)$ can be used to characterize the temperature of the crystal at a given V, since in the region of intrinsic conductivity the resistivity of the semiconductor is a single-valued function of temperature. The conversion to the absolute temperature scale was made by using the

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ACC NR: AP6026707

formula

$$\rho = \rho_0 \exp\left[T_1\left(\frac{1}{T} - \frac{1}{T_0}\right)\right], \qquad (1)$$

The values of T_1, ρ_0 and E_g for boron, determined by the "intrinsic thermometer" method, were found to be: $T_1 = 6250°K$; $\rho_0 = 10^7$ ohm cm; $E_g = 2kT_1 = 1.16$ eV. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 29Jan66/ ORIG REF: 004/ OTH REF: 004

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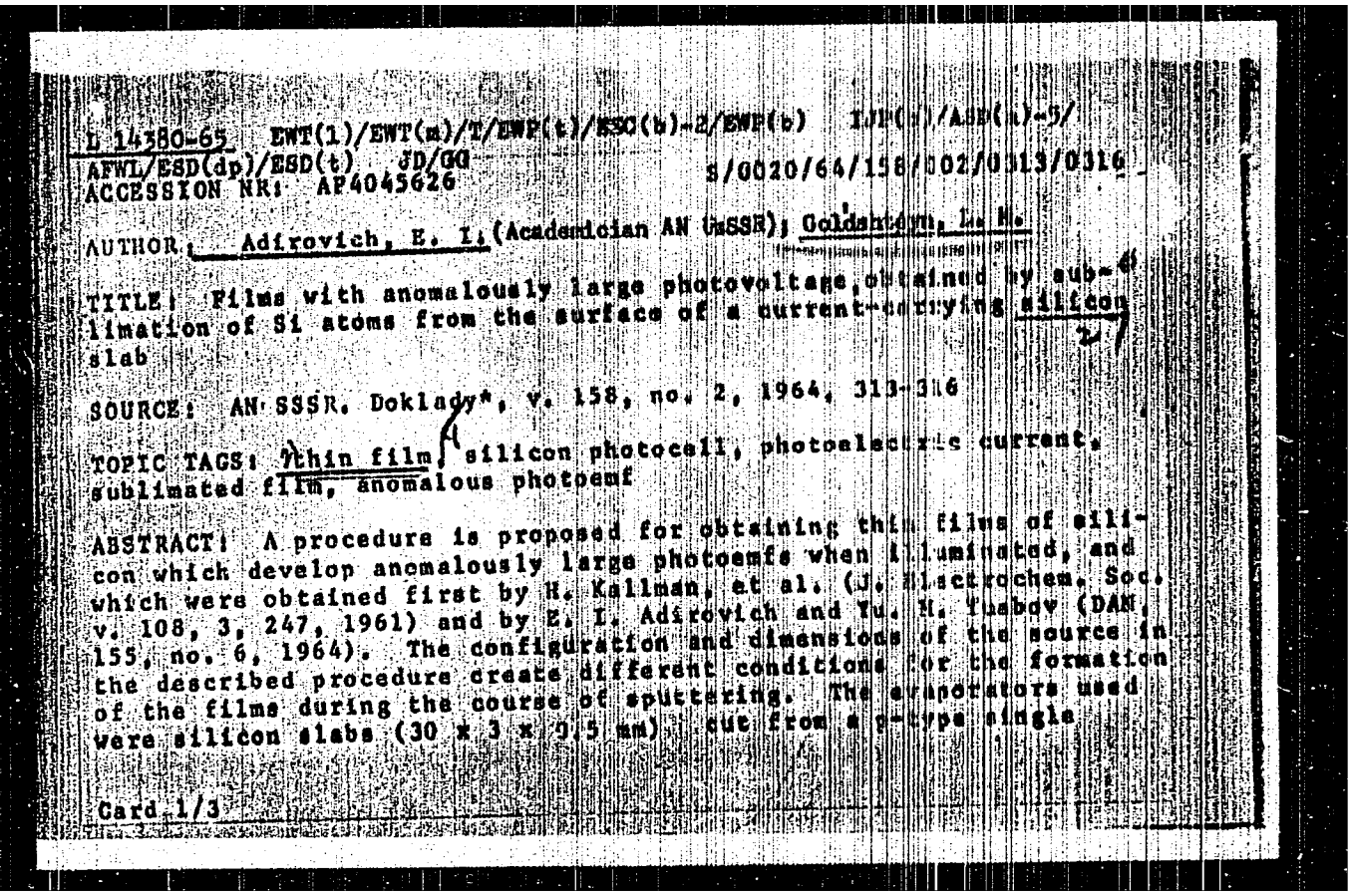

L 14380-65 EWT(1)/EWT(m)/T/EWP(t)/ESC(b)-2/EWP(b) IJP(c)/ASD(a)-5/
AFWL/ESD(dp)/ESD(t) JD/GG
ACCESSION NR: AP4045626 S/0020/64/158/002/0313/0316

AUTHOR: Adirovich, E. I. (Academician AN UzSSR); Goldantsyn, L. M.

TITLE: Films with anomalously large photovoltage, obtained by sublimation of Si atoms from the surface of a current-carrying silicon slab

SOURCE: AN SSSR. Doklady*, v. 158, no. 2, 1964, 313-316

TOPIC TAGS: thin film, silicon photocell, photoelectric current, sublimated film, anomalous photoemf

ABSTRACT: A procedure is proposed for obtaining thin films of silicon which develop anomalously large photoemfs when illuminated, and which were obtained first by H. Kallman, et al. (J. Electrochem. Soc., v. 108, 3, 247, 1961) and by E. I. Adirovich and Yu. M. Yuabov (DAN, 155, no. 6, 1964). The configuration and dimensions of the source in the described procedure create different conditions for the formation of the films during the course of sputtering. The evaporators used were silicon slabs (30 x 3 x 0.5 mm), cut from a p-type single

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ACCESSION NR: AP4045626

crystal with 1 ohm-cm resistivity. The sputtering on the substrates was effected by passing current through the silicon slab and by sublimation of the silicon on the substrate. The methods used to regulate the temperature of the evaporator and of the substrates are described. The procedure is similar to that used by Kolgore and Roberts (Review Scientific Instruments, v. 34, no. 1, 11, 1963) to deposit chemically active semiconductor surfaces. Data are presented on 10 out of 50 films produced. The films produced have properties similar to those described by the author elsewhere. "The authors are grateful to G. A. Kurov and L. A. Zhukova for electron diffraction studies of the films, and also to O. G. Bakradze for participating in the experiments. Orig. art. has: 2 figures, 3 formulas, and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk UzSSR (Physicotechnical Institute, Academy of Sciences, UzSSR)

SUBMITTED: 07May64 ENCL: 01

SUB CODE: SS, OP. NO REF SOV: 004 OTHER: 007

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L 14380-65
ACCESSION NR: AP4045626

ENCLOSURE: 01

№ п.п.	$R_{ом}$	d, μ	V_{alp}	T_{eff} °C	T_{sub} °C
1	$5 \cdot 10^{13}$	1,25	38	1170	168
2	$2 \cdot 10^{13}$	3,02	21	1170	150
3	$7 \cdot 10^{13}$	1,42	35	1170	230
4	$1 \cdot 10^{13}$	2,3	42	1240	145
5	$1,5 \cdot 10^{13}$	1,16	70	1240	78
6	$1,8 \cdot 10^{13}$	2,84	40	1270	211
7	$2 \cdot 10^{13}$	1,37	30	1270	195
8	$1 \cdot 10^{13}$	0,98	72	1320	242
9	$2,7 \cdot 10^{13}$	1,43	54	1320	242
10	$4 \cdot 10^{13}$	1,54	36	1320	90

Fig. 1. Results of measurements

R - Resistance, ohms; d - film thickness, microns; V_{alp} - anomalously large photovoltage, V; T_{eff} - temperature of silicon slab; T_{sub} - substrate temperature.

Card 3/3

GOL'DSTEYN, L. V.

Mathematical Reviews
Vol. 14 No. 7
July - August 1953
Geometry

Gol'dštein, L. V. Construction of a projective theory of curves by means of central affine geometry. Trudy Sem. Vektor. Tenzor. Analizu 9, 288–308 (1952). (Russian)

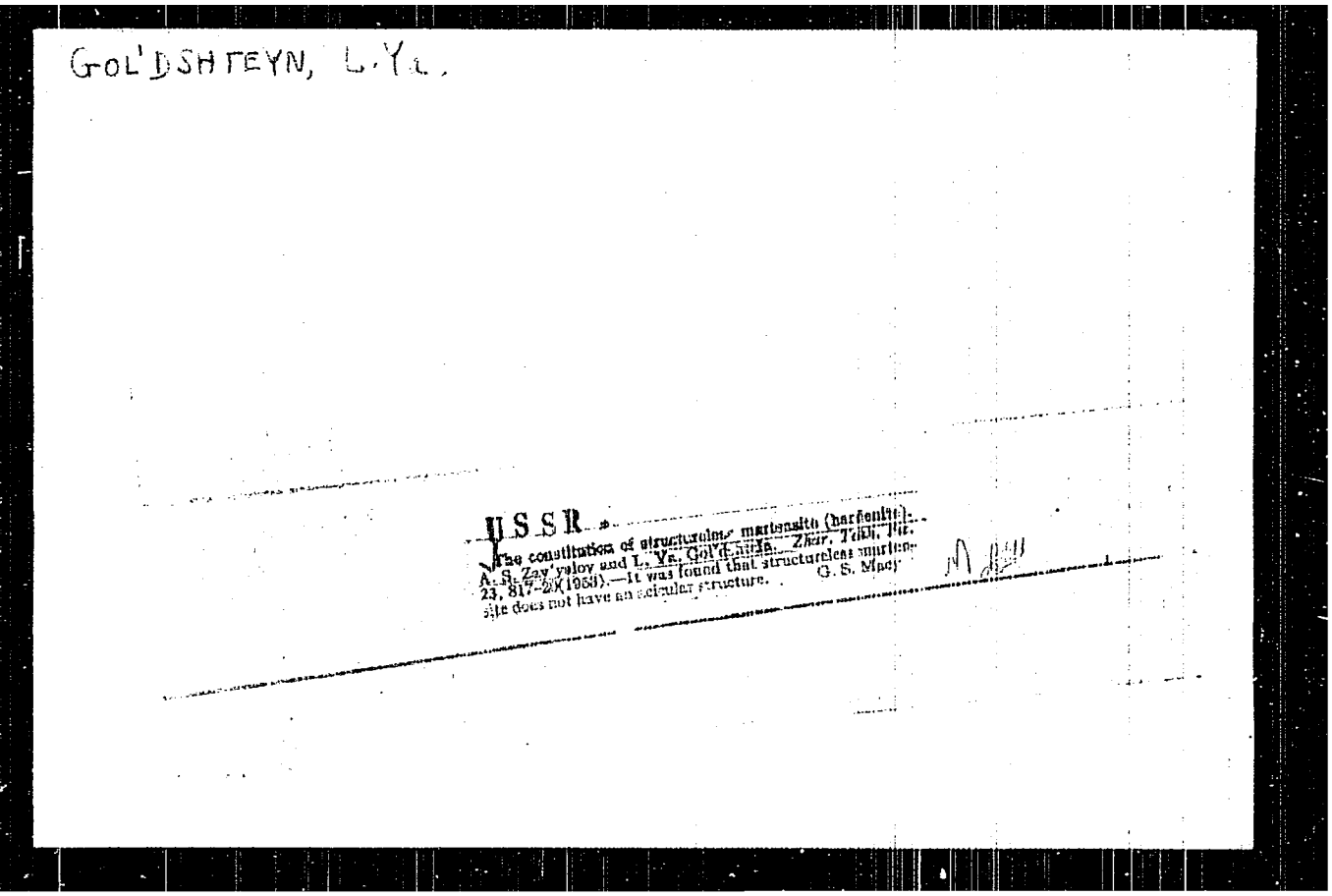
In the present paper the curve theory in a two- or three-dimensional projective space is reconstructed, i.e., the projective length $\sigma = \int \rho^{1/n} du$ defined by the integral invariant ρ of the lowest order and the projective curvatures of a curve are calculated from the standpoint of central-affine geometry, as usual, making use of absolute differentiation in a one-dimensional space and of projective normalization of point coordinates. It is also verified that $\rho = 0$ characterizes a conic in a projective plane or a curve belonging to a linear complex in a projective space; and then the Frenet formulas are obtained. The method used is not different from the usual one and the reviewer could not find original concepts or new results. The author seems to be not familiar with the book by G. Fubini and E. Čech [Geometria proiettiva differenziale, t. I, Zanichelli, Bologna, 1926].

Kawaguchi (Sapporo).

GOL'DSHTEYN, Leonid Vladimirovich, inzh.; TABUNINA, M.A., red.izd-va; TARKHOVA, K.Ye., tekhn. red.

[Safety manual for electricians servicing construction equipment] Pamiatka po tekhnike bezopasnosti dlia elektromontera po obsluzhivaniiu stroitel'nykh mekhanizmov. Izd.2., perer. i dop. Moskva, Gosstroiizdat, 1963. 81 p.
(MIRA 16:9)

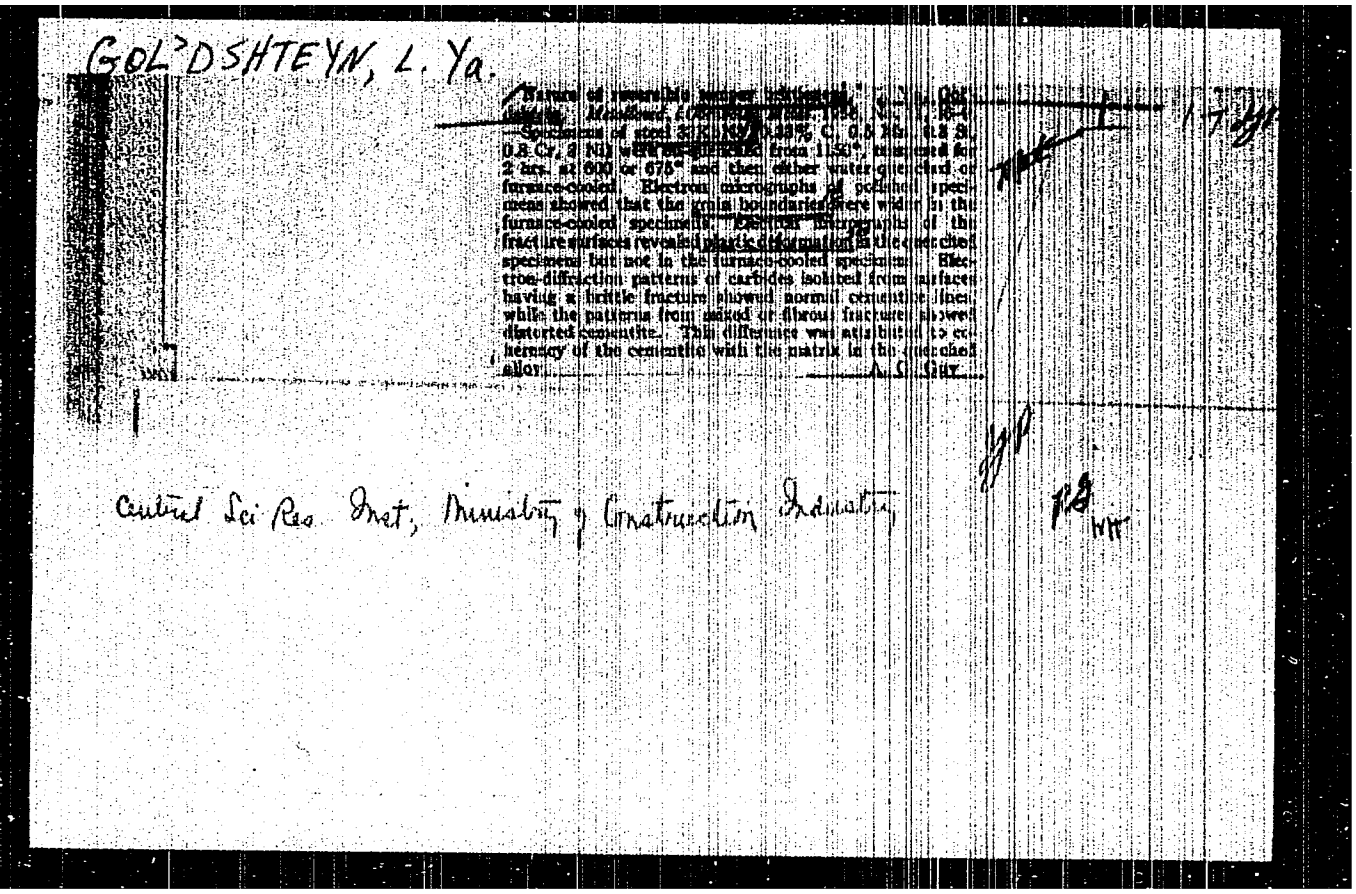
(Construction equipment--Safety measures)



GOL'DSHTEYN, L.Ya.

USSR

The constitution of structureless martensite (barfenite). A. S. Zav'yalov and L. Ya. Gol'dshtein. Zhur. Tekh. Fiz. 23, 817-24(1953).—It was found that structureless martensite does not have an acicular structure. G. S. Mach



GOL'DSHTEYN, L. Ya.

Source of reversible temper brittleness in [illegible] Metallovedenie i Obrabotka Metallov, [illegible] No. 1, pp. 16-21

Specimens of steel 3 (0.15% C, 0.33% C, 0.8 Mn, 0.8 Si, 0.8 Cr, 3 Ni) were [illegible] from 1150°, [illegible] for 2 hrs. at 600 or 675° and then either water-quenched or furnace-cooled. Electron micrographs of polished specimens showed that the grain boundaries were wider in the furnace-cooled specimens. Electron micrographs of the fracture surfaces revealed plastic deformation in the quenched specimens but not in the furnace-cooled specimens. Electron-diffraction patterns of carbides isolated from surfaces having a brittle fracture showed normal cementite lines, while the patterns from mixed or fibrous fracture showed distorted cementite. This difference was attributed to coherency of the cementite with the matrix in the quenched alloy. [illegible] S. Sinyr

Central Sci Res Inst, Ministry of Construction Industry

137-58-4-8147

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 255 (USSR)

AUTHORS: Zav'yalov, A.S., Gol'dshteyn, L.Ya., Senchenko, M.I.

TITLE: The Nature of Temper (Heat) Brittleness [O prirode otpusknoy (teplovoy) khrupkosti]

PERIODICAL: V sb.: Metallovedeniye, Leningrad, Sudpromgiz, 1957, pp 127-144

ABSTRACT: As a supplement to the hypothesis of one of the authors (Zav'yalov, "On the Theory of the Alloying and the Heat Treatment of Steel," TsNII NKTP, 1943) to the effect that temper brittleness (TB) is induced by the appearance of particles of precipitated phases on the boundaries of what had previously been austenite grains, it is postulated that the enrichment of such surfaces in the tempering process by certain elements dissolved in Fe increases the σ_s and diminishes the resistance of these zones to fracture, and this leads to the appearance of TB. This explains the high temperature of TB of high-phosphorus steels, while the absence of carbide particles (K) along the boundaries of the former austenite grains is explained by the mutual dislodging of P and C. In TB due to K precipitation, TB

Card 1/2

The Nature of Temper (Heat) Brittleness

maximums are observed after low-temperature tempering over specific extended periods of time. This is occasioned by the simultaneous processes of precipitation of new particles of K due to the C supersaturating the ferrite and to the dissolution of fine precipitates within the grain and the fact that they come down on the boundaries which increases the TB and the processes of K coagulation along the grain boundaries, which decreases it. The mechanism of K redistribution is confirmed by the electron microscope and the electron diffraction camera. Reduction in TB when the duration of pre-tempering over 600° is increased is explained by reduction in the supersaturation of the ferrite by C coagulation of small K, and enrichment thereof by alloying elements, thereby increasing their resistance to dissolution. See also RzhMet, 1957, Nr 10, abstract 20085.

A K

1. Steel--Brittleness--Analysis 2. Steel--Mechanical properties--Effects of heat treatment

Card 2/2

AUTHOR: Zav'yalov, A.S., Doctor of Technical Sciences, Prof., Gol'dshteyn, L.Ya., Engineer, and Senchenko, M.I., Engineer. 129-4-5/17

TITLE: On the problem of temper (thermal) brittleness. (O prirode otpusknoy (teplovoy) khrupkosti).

PERIODICAL: "Metallovedenie i Obrabotka Metallov" (Metallurgy and Metal Treatment) 1957, No. 4, pp. 21 - 30 (U.S.S.R.).

ABSTRACT: On the basis of tests carried out the authors established that the temper (thermal) brittleness is due to enrichment of the boundary zones of what were previously austenite grains by various admixtures; some of the admixtures in the boundary zones are present in the form of isolated phases as, for instance, carbon in the form of carbides, whilst others are present in the dissolved state (for instance, P, however, in the case of high P contents phosphides may form). During enrichment of the boundary zones by admixtures a decrease of the breaking strength of these zones will occur which in many cases is accompanied by an increase of the yield point. As a result of this there will be an increase in the critical temperature of the brittleness of these zones which will bring about brittle fracture of the metal along the boundary zones. If the brittle fracture is not along the

Card 1/4

On the problem of temper (thermal) brittleness. (Cont.) 129-4-5/17

factors which bring about a uniform distribution of the admixtures throughout the grain reduce the brittleness of the steel and the tendency of the steel to develop brittle fractures along the grain boundaries. These conclusions are based on earlier work of the authors (5, 6, 9, 10), on literary data and on experiments which are described in this paper. In these, the behaviour of two melts of Cr-Mo steel with various P contents were investigated, the compositions of which were as follows: 0.40% C, 0.28% Si, 0.42% Mn, 0.031% S, 0.028% P, 3.03% Cr and 0.46% Mo; 0.39% C, 0.24% Si, 0.49% Mn, 0.031% S, 0.097% P, 2.87% Cr and 0.41% Mo. The following heat treatment regimes were applied: heating to Ac_3 + 40 °C, quenching in oil, tempering at 650 °C for ten hours followed by quenching in water; same heat treatment with the difference that after tempering the specimens were cooled to 300 °C in the furnace with a speed of 20 °C/hr. The results if impact tests are plotted in Fig. 3, p. 24 and these show that the P content has a very pronounced influence on the tendency of the steel to develop temper brittleness. Electron microscopic investigations enabled to establish interesting features of the distribution of carbides in high P content steels after hardening and high temperature tempering. It

Card 3/4

GOLDSHTEYN, L. M.

18(7) PHASE I BOOK EXPLOITATION SOV/1838

Metallovedeniye; sbornik statey, [vyp.] 2 (Study of Metals; Collection of Articles, [Nr] 2) [Leningrad] Sudpromgiz, 1958. 265 p. 4,000 copies printed.

Resp. Ed.: G.I. Kapyrin, Candidate of Technical Sciences; Ed.: Ye. A. Krugova; Tech. Ed.: K.M. Volchok.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This is the second volume of collected scientific papers dealing with various problems in physical metallurgy, particularly in mechanical metallurgy and metallography. Topics covered include hydrogen embrittlement, intragranular distribution of elements in alloys, effect of tempering on carbon redistribution, use of tritium to investigate certain phenomena in metals, effect of certain alloying elements on temper brittleness and hardenability of steel, strength of notched specimens of brittle steel, effect of strain hardening on the properties of an aluminum alloy, etc. The articles are concerned mainly with various types of steel, though some deal with nonferrous alloys.

Card 1/23

Gol'dshteyn, L. Ya., Engineer; A.S. Zav'yalov, Doctor of Technical Sciences, Professor; and P.A. Stoyanov, Candidate of Technical Sciences. Characteristics of the Fine Structure of the Intergranular Zones of Structural Steel Affected by Temper Brittleness 53

Authors' conclusions: (1) Electron diffraction study appears to be an effective means of revealing the difference in the crystal structure of carbides situated on the fracture surface of brittle and tough steel. (2) Carbides situated on the grain boundaries of brittle steel have a structure made up of relatively perfect crystals. (3) This type of structure confirms an idea previously expressed by A.S. Zav'yalov, L.Ya. Gol'dshteyn, M.I. Senchenko, and Ye. Ya. Paley [apparently in No. 1 of the present series] concerning the three stages of carbide formation. A basic point of this idea is that the second stage is concluded by the separation of carbides, i.e., the appearance of a boundary between the carbide particles and the phase in which they originated, and, hence, by the loss of cohesive bonds between them -- a phenomenon especially noticeable around the boundaries of former austenite grains. This, together with changes in concentration and

GOL'DSHTEYN, L. Ya

25(1) PHASE I BOOK EXPLOITATION SOV/1553

Moscow. Dom nauchno-tekhnicheskoy propagandy im. F.E. Dzerzhinskogo

Sovremennyye splavy i ikh termicheskaya obrabotka (Contemporary Alloys and Their Heat Treatment) Moscow, Mashgiz, 1958. 329 p. 12,000 copies printed.

Additional Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed. (Title page): Yu. A. Geller, Doctor of Technical Sciences; Ed. (Inside book): V.V. Rzhavinskiy, Engineer; Tech. Ed.: B.I. Model'; Managing Ed. for Literatare on Metal Working and Tool Making; R.D. Beyzel'man, Engineer.

PURPOSE: The book is intended for engineering and technical personnel of heat-treatment shops and test laboratories of machine-building plants.

COVERAGE: This collection of 28 articles, compiled by 33 authors, aims to acquaint the reader with modern practice in the heat treatment of steels. The authors

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Contemporary Alloys and Their Heat Treatment SOV/1558

are primarily concerned with the development of various types of structural, tool, and heat-resistant steels and with the use of their alloying elements. Materials-handling equipment is described at some length. The treatment of alloys, particularly those of titanium, also comes within the scope of the collection. The book is thoroughly diagrammed, and a good deal of the material is shown in graphical form. Among the problems dealt with are the minimization of deformations, the introduction of the automatic control of heat-treating equipment, together with fully mechanized tool manufacture, and the optimum proportions of different alloying elements. There are numerous tables and drawings. Bibliographic listings placed at the end of chapters are predominantly Soviet. The articles comprising this collection are reports delivered at a conference held in the Scientific and Technical Propaganda House imeni F.E. Dzerzhinskiy in Moscow.

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Contemporary Alloys and Their Heat Treatment SOV/1558

AVAILABLE: Library of Congress

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GOL'DSHTEYN, L.Ya., inzh.; ZAV'YALOV, A.S., prof., doktor tekhn.nauk;
STOYANOV, P.A., kand.tekhn.nauk

Characteristics of the fine structure of intercrystallite zones in the state of temper brittleness. Metallovedenie 2:53-64 '58.
(MIRA 13:9)
(Steel, Structural--Metallography) (Crystal lattices)

AUTHORS: [illegible]

TITLE: X-ray Microbeam Studies of Deformed Steel. I
(Issledovaniye metallicheskoy stali s pomoshch'yu
rentgenovskikh mikrolucheV. I)

PERIODICAL: Fizika Met allov i Metallovedeniye, 1958, Vol 6, No 1,
pp 51[illegible]-517 (USSR)

ABSTRACT: A special source tube with a focal spot diameter of
0.15 mm and a beam current of 1 mA. The beam is shaped
into a circular point of 40 μ dia (at half
intensity); beam-reflection methods are used. Fig.1
shows certain details of the camera and specimen-holder;
the film can be set at other distances, to give the
best results. For the Co radiation used, a nickel
screened by the beam from the film by 7μ of Al foil (7μ is
enough to envelop all K-β of Co but not the
steel lines). Carbon-chromium steel type 25 was used,
normalized at 900-920°C and annealed at 620-650°C
(3 hours). Fig.2 shows the pattern from the deformed
steel (x 2); the intense spots fall up to 35° from the
[illegible] K_α line. The specimen was rotated.

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X-ray Microbeam Study of [illegible] . I [illegible] 7/126-3-3-13/[illegible]

[illegible] photographs [illegible] beam [illegible] of radially [illegible] [illegible] is established [illegible] the [illegible] [illegible] of several places of [illegible] [illegible] [illegible] [illegible] are not [illegible] [illegible], because [illegible] themselves [illegible] [illegible] normalized [illegible] [illegible] closely [illegible] [illegible] parameters. There are [illegible] figures, [illegible] 7 references, 2 of which are Soviet, 4 English.

ASSOCIATION: [illegible] V. I. Lenina (Khar'kov Polytechnical Institute imeni V. I. Lenina)

SUBMITTED: July 20, 1956 (initially); November [illegible], 1957 (after revision)

1. Steel--Microstructure 2. X-ray diffraction analysis--Applications 3. X-ray diffraction analysis--Equipment 4. Crystals--Lattices

Card 2/2

AUTHOR: Fuks, M.Ya.
Gol'dshteyn, Ya.

TITLE: X-Ray Investigation of [illegible] by Means of Micro-Beams. Part II. (Rentgenograficheskoye issledovaniye deformirovannoy stali s pomoshch'yu mikroluchkov. II)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 4, pp 673-681 (USSR)

ABSTRACT: Use of narrow "micro-beams" of X-rays is very promising from the point of view of studying plastically deformed metals, since they enable obtaining important new information on the deformation of individual crystallites. In this paper some of the results are described which were obtained in investigations by means of this method of carbon steels which were subjected to tension at various speeds. The specimens made of the carbon steel 25 were subjected to normalisation annealing at 860-870°C and tempering at 620 to 630°C with subsequent slow cooling. From these standard specimens were prepared for long duration tensile tests. According to earlier work of the authors (Ref 1), the average linear

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X-Ray Investigation of Deformed Steel by Means of Micro-beams.
Part II.

dimension of the crystallites in the non-deformed state equals 2.5 x 10^{-2} mm. Specimens were investigated after fracture in long- and short-duration tensile tests; the test conditions and the results are entered in a table on p. 2. The method of X-ray analysis was the same as that applied in earlier work (Ref.1). The X-ray exposures were taken from sections of the specimens with residual elongations of 6.15 and 40%. The surface of the specimens was first etched to a depth of 0.2 mm for the purpose of eliminating the layer which had been work hardened during machining. The distribution of the intensity was obtained by means of [illegible] the direction of the primary beam perpendicular to the direction of the deformation of the specimen and perpendicular to the specimen axis. The interference beam from the plane (220) was investigated. The diameter of the irradiated section amounted to 0.5% or 120μ in the case of a convergence of the primary beam of

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X-Ray Investigation of Deformed Steel by Means of Micro-Beams. Part II.

1.9×10^{-3} to 25×10^{-3} rad. The exposure time was 30 to 40 hours. A common feature of all the X-ray diffraction pictures of the deformed specimens, obtained by the micro-beam method, is that instead of single sharply defined spots, which are characteristic for non-deformed specimens, separate arcs were observed, Fig.1. These arcs consist of groups of more or less pronounced individual spots or continuous black lines. The regularity of distribution of the spots in the arc (slight displacement of the spots in the radial direction), which was observed in a number of cases, indicates that adjacent spots in the arcs correspond to adjacent fragments or at least fragments which are very near to each other. Therefore, the magnitude of angular deorientation calculated from the angle between adjacent spots in the arc characterises the degree of deorientation of the fragments in the crystallite. Results are given for the following conditions of experiment: fracture by tensile stresses applied for 137 hours at 450°C; fracture by tensile stresses at 450°C applied for 15.5 hours;

 fracture by tensile stresses at 450°C applied for a

X-Ray Investigation of Deformed Steel by Means of Micro-Beams. Part II.

duration of 3 mins; fracture of a specimen after deformation in the cold state; investigation of the influence of the texture; long duration stressing of the steel 35KhNM (at 500°C). The conclusions of the authors can be summarised thus:

1. It is shown that it is possible to apply the method of micro-beams for the purpose of studying the plastic deformation of steels.
2. Long duration stretching of "Steel 25" at 450°C is accompanied by refining of the gragments in the crystallites and their deorientation. The degree of deorientation of the fragments increases with increasing speed and degree of deformation. The magnitude of the angle of deorientation of the fragments in the investigated cases fluctuate between 5 and 40 mins and the magnitude of the total area of decrientation in the individual crystallite fluctuates within the limits of a few degrees. A fine structure was detected of some fragments formed during deformation.

X-Ray Investigation of Deformed Steel by [illegible] of Micro-Beams.
Part II.

3. In the case of deformation in the cold state of "Steel 25", the breaking away and decrementation of the fragments is considerably more intensive and distortions which occur in the fragments are larger than they are for an equal deformation speed at 450°C.
4. Deformation in the cold state and subsequent annealing at 450°C does not transform the fine structure of the steel into the same state as short duration deformation at 450°C, i.e. the effects of deformation and heating on the structure of the metal are not additive.
5. Fragments in crystallites of deformed "Steel 25" are not equivalent to mosaic blocks and are considerably larger than the latter. However, this does not exclude at all the existence of a mosaic structure of the fragments themselves.
6. Long duration stretching of steel 35KhNM, the composition of which is more complex, is accompanied by a greater breaking up of the crystallites than long duration stretching of "Steel 25" at 450°C.
Card 5/6 7. The obtained results lead to the assumption that an

X-Ray Investigation of Deformed Steel by Means of Micro-Beams. Part II.

increase in the decrientation between fragments brings about an increase in the work hardening of the metal. 8. The sliding mechanism of fragment formation plays a fundamental role in the long duration stretching of carbon steel 25 as well as of the steel 35KhNM, under the conditions pertaining in the experiments described in the paper. There are 6 figures, 1 table and 5 references of which 3 are Soviet and 2 English.

ASSOCIATION: Khar'kovskiy Politekhnicheskiy Institut (Khar'kov Polytechnical Institute)

SUBMITTED: 20th June 1956

Card 6/6

GOL'DSHTEYN L. YA.

PHASE I BOOK EXPLOITATION SOV/5752

Metallovedeniye; sbornik statey, No. 3 (Physical Metallurgy; Collection of Articles, No. 3), Leningrad, Sudpromgiz, 1959. 390 p. 3,200 copies printed.

Ed.: G. I. Kapyrin, Candidate of Technical Sciences; Literary and Tech. Ed.: N. I. Doronenko.

PURPOSE: This collection of articles is intended for scientific personnel at research and educational institutions and industrial plants and also for advanced students.

COVERAGE: The articles report the results of investigations of 1) the effect of various factors on the susceptibility of constructional and heat-resistant steels and titanium alloys to brittle failure at various temperatures under various conditions of loading (long-time, short-time, cyclic, noncyclic) 2) alloying, structure, and condition of alloys as related to their mechanical properties, and 3) corrosion resistance and evaluation of stainless and heat-resistant steels. The articles are accompanied by numerous Soviet and non-Soviet references. No personalities are mentioned.

18(7) SOV/48-23-5-19/31

AUTHORS: Fuks, M. Ya., Gol'dshteyn, L. Ya.

TITLE: Investigation by the Aid of an X-Ray Microbeam of Steel Deformed With Varied Velocity at Increased Temperature (Issledovaniye pri pomoshchi rentgenovskikh mikropuchkov stali, deformirovannoy s razlichnoy skorost'yu pri povyshennoy temperature)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 5, pp 629-634 (USSR)

ABSTRACT: By way of an introduction the authors refer to similar investigations carried out by B. A. Movchan, Ye. V. Kolontsova and B. M. Rovinskiy. St.25 was the steel type investigated, the samples were standardized and subsequently, as shown in table 1, they were deformed within different time intervals, with temperature amounting to 450°C. Investigations were carried out with a fine-focus X-ray tube (system according to B. Ya. Pines). Investigations are then extended to the non-deformed state of the samples, in which connection the special inhomogeneities of the lattice period and the disorientation of the structural parts were specially considered. Two microphotograms are shown in this connection, that were taken in the tangential and radial direction of the samples. Investigation results of the deformed state are summarized in table 1.

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SOV/48-23-5-12/31

Investigation by the Aid of an X-Ray Microbeam of Steel Deformed With Varied Velocity at Increased Temperature

Concerning the deformation stages of 6%, 15% and 40% the disorientations of the structural parts determined on the strength of the microphotograms are shown for the various deformation times. There is a strong dependence observable in disorientation on velocity and degree of deformation, namely, disorientation increases with velocity and degree of deformation. The results obtained from the same investigations on the steel type 35KhNM are then compared; the dimensions of the crystallites of this steel are lower by half as compared with those of St.25. It follows from the results thus obtained that in the range of deformation velocity investigated the macroscopic deformation of steel at 450°C is in relation with a displacement mechanism of the structural parts. There are 5 figures, 1 table, and 5 references, 4 of which are Soviet.

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KOGAN, L.S.; GOL'DSHTEYN, L.Ya.

Some properties of fused cements. TSement 26 no.2:7-13 Mr-Ap '60. (MIRA 13:6)
(Cement)

S/137/62/000/003/138/191
A052/A101

AUTHORS: Semenov, N. Ye., Voskoboynikov, D. B., Gol'dshteyn, L. Ya.

TITLE: The effect of aluminum on the strength of bimetallic compound of zinc alloy with steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 60, abstract 3I384 ("Vestn. Vses. n.-i. in-ta t.-d. transp.", no. 6, 1961, 42-43)

TEXT: The effect of Al on the formation of Fe-Zn-phases in the metal used for zinc-plating was investigated, as well as its effect on the formation of the transition zone and on mechanical properties of a bimetallic compound. An addition of 0.2% Al raises the resistance to shearing stress of the bimetallic compound to 27 kg/mm^2 compared with 23.3 kg/mm^2 without an Al addition. The presence of 2% Cu reduces the resistance to shearing stress to 14.8 kg/mm^2. An increase of Al content to 9% has just a slight effect on the resistance to shearing stress. It is recommended to increase the Al content in ЦАМ9-1,5 (TsAM9-1,5) Zn-alloy to 0.5 - 0.7% to prevent the formation of $FeZn_4$ in the bath and to facilitate the cleaning of the bath from the ferrous components (in this case $FeAl_3$ is formed which comes to the surface).

E. Volin

[Abstracter's note: Complete translation]

Card 1/1

S/137/62/000/005/083/150
A006/A101

AUTHORS: Lyubarskiy, I. M., Voskoboynikov, D. B., Gol'dshteyn, L. Ya.

TITLE: Changes in the fine structure and hardness of low-carbon riming steel depending on the heat treatment conditions and the duration of mechanical aging

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 34, abstract 5I133 ("Tr. Donetsk. politekhn. in-ta", 1961, 56, 111-115)

TEXT: Changes in the fine structure were studied by the X-ray method and by measuring the hardness of low-carbon grade 2КП (2kp) and 3КП (3kp) steel during mechanical aging: the steel had previously been subjected to various kinds of heat treatment. The investigation was carried out on specimens of 10 x 10 x 10 mm size, cut out of specimens for toughness tests. The impact specimens were subjected to a certain type of heat treatment (8 variants), tensile deformation by 10%, and aging at 250°C for 1 or 5 (?0) hours. Radiographs were taken by the method of reverse exposure on a plane container in a КРОС -1 (KROS-1) camera, in emission of Co-anode of an X-ray, type БСВЛ (BSVL), tube. The width of line (310) K_{α} was investigated. Radiographs taken by the Deb

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Changes in the fine structure and hardness ...

Debye method, at angles of 35 and 90°, are also presented. It was established that during deformation, the width of line (310) K_α increases sharply for all investigated types of preliminary heat treatment. Maximum relative increase in the line width takes place in high-tempered steel, least increase in quenched steel. During the aging process changes occur in the fine steel structure, caused by high-temperature tempering phenomena and mechanical aging proper. It is pointed out that the kinetics and nature of fine-structural changes in steel during mechanical aging depend substantially on the type of preliminary heat treatment; quenched steel is the most resistant to aging. The method of cooling after tempering does not affect the nature of changes in the fine structure of the steel during mechanical aging. Increased duration of mechanical aging over one hour is accompanied by some reduction of hardness in such specimens which showed higher hardness values after heat treatment. There are 5 references.

Z. F.

[Abstracter's note: Complete translation]

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000515710013-8"

S/806/62/000/003/017/018

AUTHORS: Bushe, N.A., Lyubarskiy, I.M., Voskoboynikov, D.B., Gol'dshteyn, L.Ya.

TITLE: "Bulging" of lead babbitt.

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniye splavov tsvetnykh metallov. no.3. 1962, 194-203.

TEXT: The paper describes a recently discovered problem peculiar to the low-tin (appx. 2% Sn) babbitt BK2 (BK2), not observed on any high-tin babbitt, namely, the "bulging" of the babbitt layers in separate points of a bearing. The investigation was conducted by the All-Union Scientific Research Institute of Railroad Transportation and the Diesel-Locomotive Factory imeni Malyshev. Most frequently the babbitt layer exhibits large bulges, up to 20-mm diam, with separation of the babbitt layer from the backing. Fissures visible to the naked eye appear on the surface of the bulges. Some bearing inserts exhibit small pimples of up to 2 mm diam, which are not accompanied by insert/backing separation or the appearance of surface fissures. The bulging was observed on inserts stored in both dry and moist conditions, with a protective lubricant layer and without any lubricant. While the bulges may appear anywhere, the large bulges form preferably on the

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darker oxidized portions of the insert surface. Bulges have not been manifest in inserts installed on operating engines, nothing has any great incidence of insert failures by fissuration or crumbling of the babbitt layer been reported. Statistical analysis shows that bulging correlates with an increase of ingot babbitt and decrease of scrap babbitt in the smelting charge, also with the change from air cooling to water cooling, which is intended to produce a finer-grain structure. In fact, the composition of BK2 underwent a sharp change in 1957, and is no longer the alloy originally tested in 1949-51. The Ca content has thus changed from 0.06-0.16% to 0.30, the Na from 0.15-0.31 to 0.45%; concurrently the H_B has changed from 15-20 to 25-32. It was found experimentally (near-full-page table) that all inserts suffering from large or small bulges had an excessive amount of Na, namely, in excess of the saturation amount at room T (0.4%). All nondefective stored specimens had Na contents less than 0.4%. The Ca content was not critical. The Mg content in all specimens was below standard (0.04-0.09%). The microstructure of all bulged inserts was the fine-crystalline structure of a rapidly-cooled babbitt. Conclusions: The low-Na alloy used prior to 1957 aged less intensely, the high-Na alloy produced since 1957 ages more intensely, with segregation of a Ca-rich secondary phase (Pb_3Ca, Pb_3Na, and $PbMg_2$) in a finely-dispersed state. Microstructural analysis on aged and over-aged specimens (detail explanation and

photos shown) revealed sizable distortions along the babbitt-grain boundaries in the presence of a large amount of Na. The dissolved gases trapped in water-cooled cast specimens diffuse along the boundaries and add to the residual stresses, until bulging occurs. The increased oxidation of bulging inserts is an indication that corrosion processes are at work also. All other conditions being equal, bulging occurs preferably in inserts that exhibit casting defects (cavities, etc.) and inadequate insert-to-backing adhesion. Specifications have been established for: (1) Content: 0.06-0.20% Ca, 0.15-0.30% Na, 0.03-0.09 Mg, 1.5-2.5% Sn, the remainder Pb; (2) hardness: H_V 23 after 72 hrs following casting; (3) gas content: Measures have been taken (unspecified) to reduce the freezing rate of the babbitt and reduce the amount of dissolved gases. There are 5 figures, 2 tables, and 7 Russian-language Soviet references.

ASSOCIATION: None given.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000515710013-8"

GOL'DSHTEYN, L.Ya.; SLIVA, Ya.

Analysis of the mineralogical composition of fused protland-cement clinkers. Trudy Giprotsement no.24:26-35 '62. (MIRA 16:4)

(Cement clinkers—Analysis)

GOL'DSHTEYN, L.Ya.

Some properties of fused cements. TSement 28 no.1:9-10 Ja-F '62. (MIRA 16:5)
(Cement--Testing)

TKACHEV, V.V., inzh.; GOL'DSHTEYN, L.Ya., inzh.

Technical consultation. TSement 28 no.4:24 Jl-Ag '62. (MIRA 15:7)

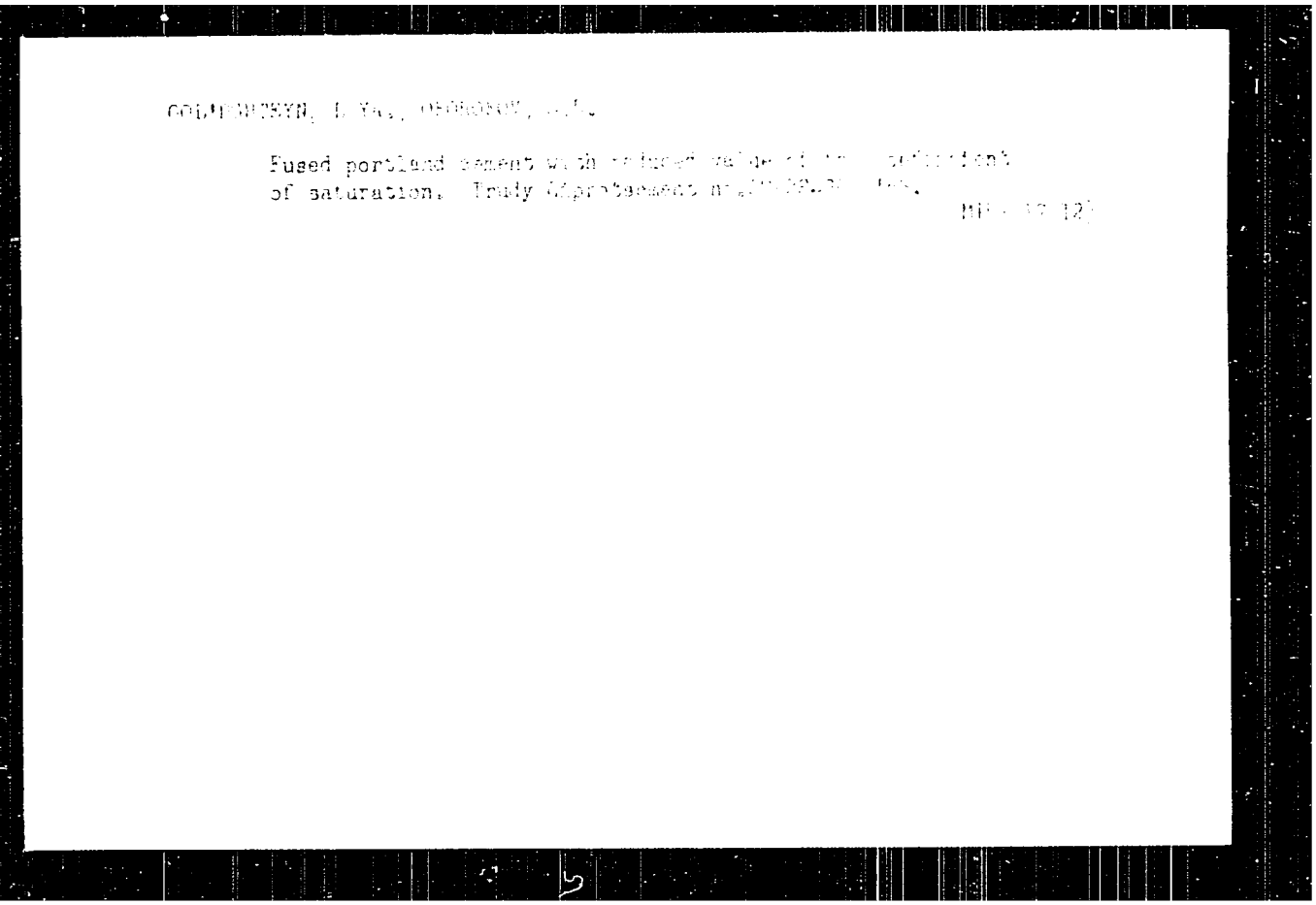
1. Gosudarstvennyy institut proyektirovaniya predpriyatiy i po nauchno-issledovatel'skim rabotam tsementnoy promyshlennosti.
(Cement industries)

KOGAN, L. S.; GOL'DSHTEYN, L. Ya.

Characteristics of preparing mixes during the production of fuel clinkers on the mineral part of Baltic Sea Region oil shale. Trudy Giprotsement no. 26:29-44 '63. (MIRA 17:5)

GOL'SHTEYN, L. Ya.; CAVINA, V. N.; KOPILEVICH, V. S.; KORNEYEV, V. I.

Determining the viscosity of cement raw material mixtures in a pyro-plastic state. Trudy Giprotsement no. 26:130-142 '63. (MIRA 17:5)



Fused portland cement w[illegible] of saturation. [illegible]

[illegible]

GOL'DSHTEYN, L.Ya.; KOPYLEVICH, V.S.

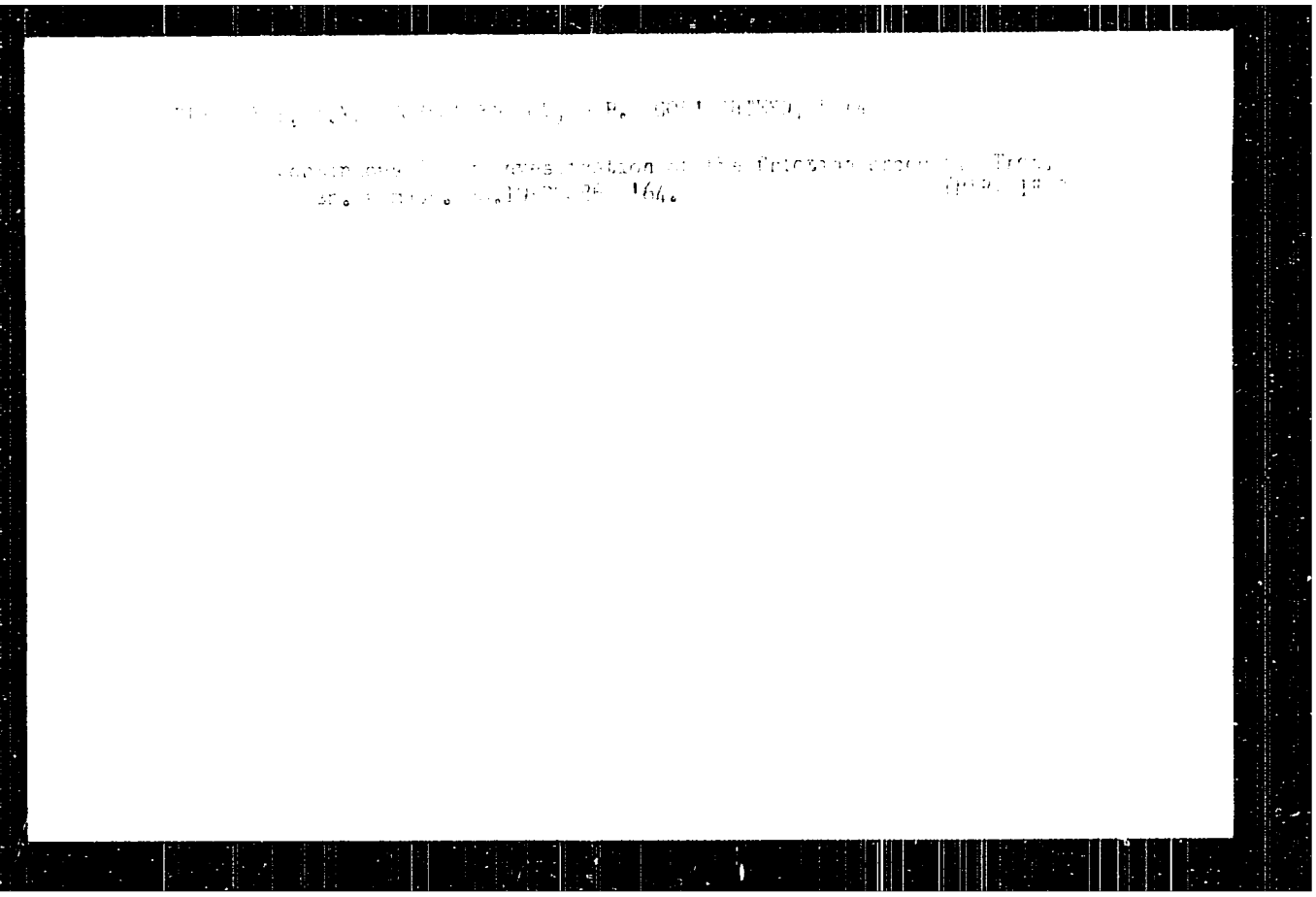
Characteristics of the fusability of portland cement raw material mixtures. Trudy Giprotsement no.27:37-55 '63. (MIRA 17:12)

GOL'DSHTEYN, L. Ya.

Fusibility of raw cement mixes. TSement 29 no.2:6-8 Mr-Ap '63. (MIRA 16:4)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy i nauchno-issledovatel'skim rabotam tsementnoy promyshlennosti.

(Cement—Testing)



GOL'DSHTEYN, L.Ye.

Quantitative distribution of fungi-microphytes in the southwestern Kyzylkum. Uzb. biol. zhur. 8 no.4:38-41 '64. (MIRA 18:7)

1. Institut botaniki AN UzSSR.

GOL'DSHTEYN, L.Ya.; OKOROKOV, S.D.

Possibility of considerably increasing the content of free CaO and MgO of Portland cements during their manufacture by the fusion method. Dokl. AN SSSR 159 no.2:420-422 N '64.
(MIRA 17:12)

1. Predstavleno akademikom P.A. Rebinderom.

L 20239-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(b) MJW/JD
ACCESSION NR: AP5000937 S/0129/64/000/012/0039/0041

AUTHOR: Balter, M. A.; Dukarevich, I. S.; Col'dshteyn, L. Ya.

TITLE: Phase composition of boronized steel layer 18 B

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1964, 39-41, and insert facing p. 25

TOPIC TAGS: boronizing, steel boronizing, boronized layer thickness, carbon steel boronizing, alloy steel boronizing, boronized layer property

ABSTRACT: The phase composition, depth, and the hardness of the boronized layer and transition zone in several steels were determined in order to compare the suitability of the steels for boronizing and to establish the effect of alloying elements on the properties of the boronized layer. It was found that the chemical composition of carbon and low-alloy steels has no essential effect on the rate of boron diffusion. Higher carbon content decreases the diffusion rate only with prolonged (over 3 hr) boronizing. Chromium at contents of

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L 20239-65
ACCESSION NR: AP5000937

0.9—1.5% has no significant effect on the depth of the boronized zone. However, titanium or combinations of silicon, molybdenum, aluminum, or chromium, tungsten, and manganese reduce the rate of boron diffusion. In high alloy steels, such as 3Kh2V8, 1Kh12, 2Kh11, G13L, and Kh18N9T, the maximum thickness of the boronized layer only amounted to 0.03—0.08 mm, and the layer peeled off easily. The structure of the boronized layer in all investigated steels was similar: 70—90 vol. % needle-shaped borides and the remainder, d-phase with boride inclusions. The microhardness (Hμ) was 1300—2400 for FeB and Fe_2B, 420—1170 for a mixture of α-phase and borides, and 600—980 for the carbide phase. The structure of the transition zone differed from the structure of the core, and the micro-hardness of the transition zone was 50—100 kg/mm² higher than that of the core owing to carbon diffusion toward the center. This diffusion of carbon changed the chemical compositions and properties of the transition zone and made the rate of boron diffusion almost independent of carbon content. Orig. art. has: 4 figures.

ASSOCIATION: none

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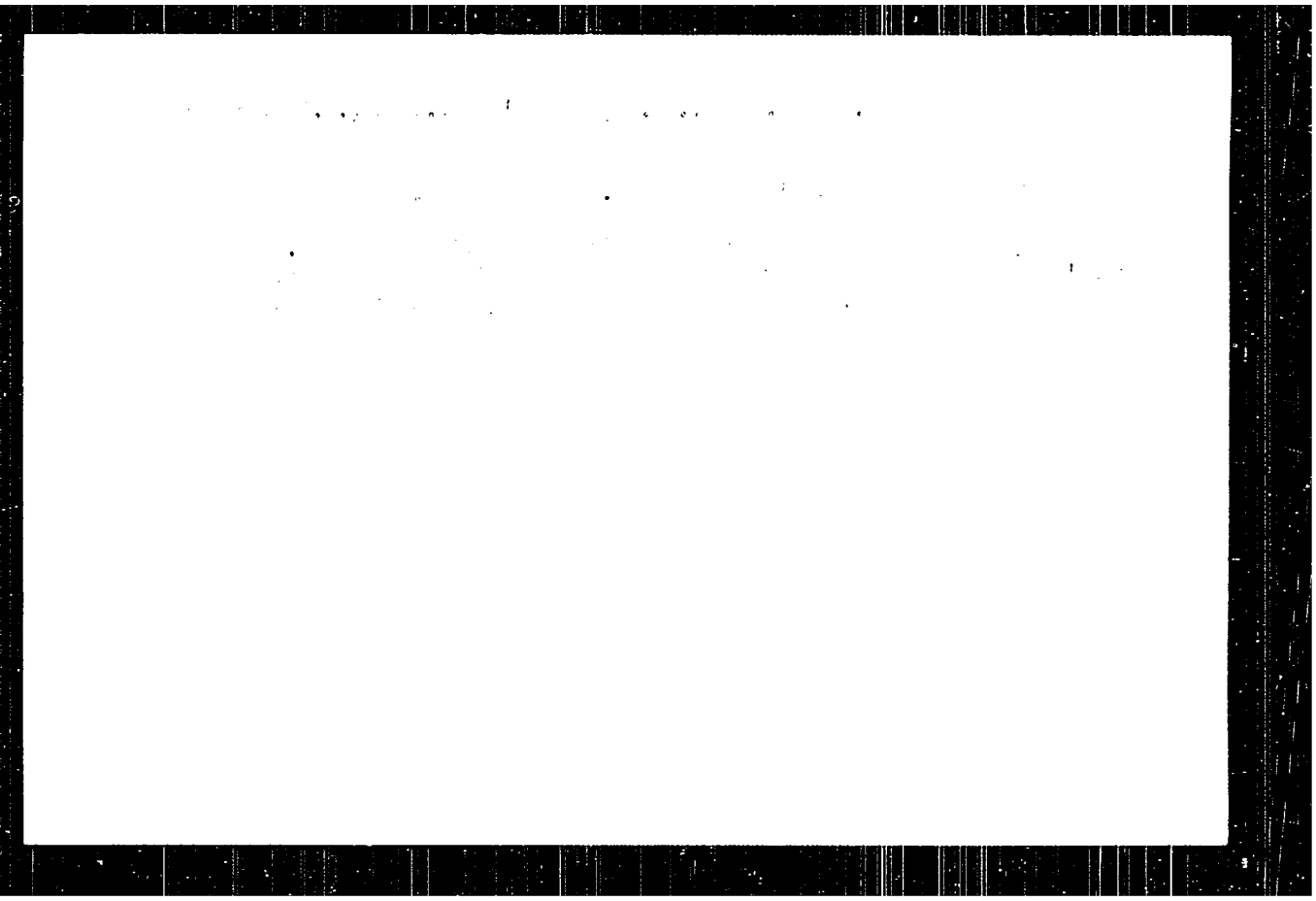

(N) L 12089-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) MJW/JD

ACC NR: AP6000608 SOURCE CODE: UR/0129/65/000/012/0030/0033

AUTHOR: Parshin, A. M.; Gol'dshteyn, L. Ya.; Pechnikov, I. I.; Leonova, N. I.

ORG: none

TITLE: Hardening of Kh18N22V2V2 austenitic chromium nickel steel after aging at 600-750°C

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1965, 30-33

TOPIC TAGS: austenitic steel, metal hardening, chromium steel, nickel steel, phase analyzis/ Kh18N22V2T2 austenitic chromium-nickel steel

ABSTRACT: Austenitic Cr-Ni steels alloyed with 1.3-3% Ti are widely used; their high mechanical properties are achieved by short (10-20 hr) aging at 700-750°C following austenitization. Yet the mechanism of this hardening, as well as the microstructural transformations occurring in the steels considered, has not yet been adequately investigated. Hence, the authors investigated specimens of industrially manufactured Kh18N22V2T2 steel subjected to austenitization at 1200°C (for 1 hr) with subsequent water quenching followed by isothermal aging at 500-950°C for up to 5000 hr. These specimens were subjected to tensile and impact-bending tests at room temperature and their microstructure was examined by means of optical and electron microscopes as well as selective oxidation. Findings: impact strength decreases at temperatures at which tensile strength increases; resistance to impact loadings decreases with in-

Card 1/3 UDC: 621.785.74:669.14.018.89

* Error; Journal states X18H22B2T2

creasing aging time; at 1200°C (1 hr, water quenching) the microstructure of the steel consists of austenite and primary carbonitrides of the Ti(C, N) type and there are no excess phases on grain boundaries and twins. Hardening of this steel is accomplished only after aging at 600-750°C. Depending on the time and temperature of aging, the following intermetallide phases may appear in Kh18N22V2T2 steel: a) phases β-Ni_3Ti with face-centered cubic lattice; b) phases α-Ni_3Ti with hexagonal tightly packed lattice; c) phases Fe_2Ti with hexagonal tightly packed lattice; d) σ-phases of the Fe(Cr, W) type with β-uranium type lattice. A comparison of the changes occurring in the mechanical properties of Kh18N22V2T2 steel at room temperature with the changes in microstructure owing to aging indicates that the most intense hardening of the material, accompanied by a decrease in impact strength (and plasticity) occurs during the period when no changes as yet are detected in the steel's microstructure. Hence, hardening during this stage of aging is not associated with the segregation of a discrete β-Ni_3Ti phase and, instead, is caused by preparatory processes within the austenite grains (redistribution of Ti) preceding the segregation. The hardening of steel at 600-750°C may be attributed to elastic distortions of the austenite lattice in the pre-segregation zones of the β-Ni_3Ti phase and to the steel's inability for stress relaxation under these conditions. Softening with increasing time of aging (e.g. at 750°C) is conditioned by the stress relaxation occurring on the formation, segregation and coagulation of the β-Ni_3T phase. Thus, hardening is caused by preparatory processes within the grains of the solid solution, preceding the segregation of this phase, whereas softening, on the other hand, is caused by the segregation of

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ACC NR: AP6000608

the intermetallide. These findings also refute the contention of Sorokin et al. (Zavodskaya laboratoriya, 1959, no. 6) and Blok et al. (Zavodskaya laboratoriya, 1957, no. 8) that hardening is attributable to the formation of the intermetallide phase β-Ni_3Ti with face-centered cubic lattice. Orig. art. has: 5 figures

SUB CODE: 11, 13 SUBM DATE: none/ ORIG REF: 003/ OTH REF: 000

Card 3/3

PARSHIN, A.M.; GOL'DSHTEYN, L.Ya.; PECHNIKOV, I.I.; [illegible]

Hardening of Kh13N22B2T2 steel following aging at 600-750° C.
Metalloved. i term. obr. met. no. 12:30-33 D '64.
(MIRA 18:12)

ACC NR: AR6027505 SOURCE CODE: UR/0137/66/000/004/I132/I132

AUTHOR: Parshin, A. M.; Gol'dshteyn, L. Ya.; Pechnikov, I. I.; Lebedeva, N. I.

TITLE: Strengthening of Kh18N22V2T2 steel after aging at 600-750°C

SOURCE: Ref. zh. Metallurgiya, Abs. 4I132

REF SOURCE: Metallovedeniye i term. obrabotka metallov, no. 12, 1965, 30-33

TOPIC TAGS: high strength steel, austenite steel, metal aging, stress relaxation / Kh18N22V2T2 steel

TRANSLATION: Sheets of Kh18N22V2T2 steel were aged isothermally at 500-950°C for periods up to 5000 hr, after austenitizing at 1200°C with subsequent water quenching. The steel samples were tested in tension and impact bending. Microstructures were analyzed by light and electron microscopes as well as by x-rays. Strengthening occurred only after aging at 600-700°C. Thus, after aging for 1 hr at 650°C, σ_b was increased to 16 kg/mm^2. In the course of subsequent aging for periods of 500 hr, σ_b increased to 21 kg/mm^2. After aging for 5000 hr at 750°C, intensive softening occurred in the steel. The strengthening of the steel at 600-750°C was explained by elastic distortions of the austenitic lattice in the α-Ni_3Ti pre-precipitation zones and by the resistance of the steel to stress relaxation under these conditions. Softening during prolonged aging

UDC: 669.15'26'24'27'295.017.3:621.785.78

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ACC NR: AR6027505

was caused by stress relaxation during the formation and separation of the α-Ni$_3$Ti phase, as well as by its coagulation. I. Tulupova.

SUB CODE: 11,13

Card 2/2

RODKINA, Raisa Abramovna; IL'CHENKO, I.T., prof., doktor med. nauk, red.; KOZHEVNIKOVA, V.A., red.; GOL'DSHTEYN, L.Ye., red.; SPIRIDONOV, N.F., tekhn. red.

[Cancer of the cervix uteri and its stages] Rak sheinoi matki i stadii. Kuibyshev, Kuibyshevskii med.in-t, 1960. 205 p. (MIRA 15:4)

(UTERUS—CANCER)

GETSELEV, Vladimir Borisovich; TERTYSHNIK, Grigoriy Afanas'yevich; GOL'DSHTEYN, L.Ye., redaktor; SHCHERBAKOV, A.I., tekhnicheskiy redaktor

[At the thick of life] V gushche zhizni. [Kiubyshev] Kuibyshevskoe kn-vo, 1955. 57 p. (MLRA 9:8)
(Collective farms)

MOLOCHNIKOV, L.N.; GOL'DSHTEYN, L.Ye., red.; SPIRIDONOV, N.F., tekhn. red.

[Operation and repair of electric dredging equipment] Ekspluatatsiia i remont elektricheskikh zemsnariadov. Pod red. M.N. Miasoedova. [Kuibyshev] Kuibyshevskoe knizhnoe izd-vo, 1955. 89 p. (MIRA 11:8)
(Dredging machinery--Maintenance and repair)

NAUMENKO, German Vladimirovich; GOL'DSHTEYN, L.Ye., redaktor; SHCHERBAKOV, A.I., tekhnicheskiy redaktor

[Bright temper of steel parts] Svetlyi otpusk stal'nykh detalei. [Kuibyshev] Kuibyshevskoe knizhnoe izd-vo, 1956. 11 p. (MIRA 10:9)
(Steel--Heat treatment)

BYLINKIN, Petr Petrovich; GOL'DSHTEYN, L.Ye., redaktor; PETROPOL'SKAYA, N.Ye., redaktor; SHCHERBAKOV, A.I., tekhnicheskiy redaktor

[Collective creativity; how we increase labor productivity]
Kollektivnoe tvorchestvo; kak my povyshaem proizvoditel'nost' turda. [Kuibyshev] Kuibyshevskoe knizhnoe izd-vo, 1956. 16 p. (MLRA 10:9)

1. Starshiy master zavoda KATEK (for Bylinkin)
(Machinery industry)

PETROV, Ivan Prokhorovich; TRAKHTENBERG, B.F., kandidat tekhnicheskikh nauk, redaktor; GOL'DSHTEYN, L.Ye., redaktor; SHCHERBAKOV, A.I., tekhnicheskiy redaktor

[Production of high-strength magnesium cast iron] Proizvodstvo vysokoprochnogo magnievogo chuguna; iz opyta Syzranskogo gidroturbinnogo zavoda. Pod red. B.F.Trakhtenberga. [Kuibyshev] Kuibyshevskoe knizhnoe izd-vo, 1956. 42 p. (MLRA 10:9)
(Cast iron--Metallurgy)

GOL'DSHTEYN, L.Ye., red.

[City of Kuybyshev] Gorod Kuibyshev. [Kuibyshev] Kuibyshevskoe knizhnoe izd-vo, 1957. 260 p. (MIRA 11:10)
(Kuybyshev--Description)

MIT'KEVICH, Georgiy Petrovich; MAKEYEVA, Lyudmila Nikolayevna; PUTOKHIN, N.I., doktor khim.nauk, nauchnyy red.; GOL'DSHTEYN, L.Ye., red.; YASHEN'KINA, Ye.A., tekhn.red.

[Plastics, a new building material] Plastmassy - novyi stroitel'nyi material. Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1958. 26 p. (MIRA 13:12)

(Plastics)

IVANOV, Nikolay Vasil'yevich; FOMENYKH, L.I., kand.ekon.nauk,dots., red.; GOL'DSHTEYN, L.Ye., red.; YASHENKINA, Ye.A., tekhn. red.

[Concentration of production and the specialization of enterprises of local state industry]Kontsentratsiia proizvodstva i spetsializatsiia predpriiatii mestnoi gosudarstvennoi promyshlennosti. Kuibyshev, Kuibyshevskii planovoi in-t, 1961. 55 p. (MIRA 15:8)

(Kuybyshev Province--Industrial management)

SOBOLEV, I.M.; SIMANKOV, G.M., otv. red.; KOVALEV, O.I., red.; KOGAN, I.B., red.; LOVYAGIN, N.V., red.; NAZAROVA, N.V., red.; GOL'DSHTEYN, L.Ye., red.; DURASOVA, V.M., tekhn.red.

[Guidebook to the city of Kuybyshev] Putevoditel' po gorodu Kuibyshevu. Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1962. 319 p. (MIRA 16:9)

(Kuybyshev--Guidebooks)